



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask
 8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



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SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
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Canadian Classification	WHMIS: Product is listed as uncontrolled product.
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Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
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Reactivity	0	
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Category 2B: Eye irritation

Category 3: Respiratory irritation



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5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask
 8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
UN-Proper Shipping Name: Not Regulated
Transport Hazard Class: None on finished product
Packing Group: None on finished product
Marine Pollutant: None on finished product
Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask
 8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask
 8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

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Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



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Canadian Center for Occupational Health and Safety

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MULTI-MIX® MM-3000C

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1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask
 8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask
 8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask
 8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
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TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

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Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask
 8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
UN-Proper Shipping Name: Not Regulated
Transport Hazard Class: None on finished product
Packing Group: None on finished product
Marine Pollutant: None on finished product
Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
UN-Proper Shipping Name: Not Regulated
Transport Hazard Class: None on finished product
Packing Group: None on finished product
Marine Pollutant: None on finished product
Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
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Canadian Classification	WHMIS: Product is listed as uncontrolled product.
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Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

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Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

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1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
UN-Proper Shipping Name: Not Regulated
Transport Hazard Class: None on finished product
Packing Group: None on finished product
Marine Pollutant: None on finished product
Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
UN-Proper Shipping Name: Not Regulated
Transport Hazard Class: None on finished product
Packing Group: None on finished product
Marine Pollutant: None on finished product
Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask
 8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

 Telephone Number: 514-337-3331

 Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask
 8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.
 Telephone Number: 514-337-3331
 Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

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Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

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MULTI-MIX® MM-3000C

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1.2. Manufacture **Circul-Aire Inc.**
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Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
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Montreal, Quebec
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Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.
 Telephone Number: 514-337-3331
 Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

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SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

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Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.
 Telephone Number: 514-337-3331
 Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.
 Telephone Number: 514-337-3331
 Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
UN-Proper Shipping Name: Not Regulated
Transport Hazard Class: None on finished product
Packing Group: None on finished product
Marine Pollutant: None on finished product
Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
 NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
UN-Proper Shipping Name: Not Regulated
Transport Hazard Class: None on finished product
Packing Group: None on finished product
Marine Pollutant: None on finished product
Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

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Canadian Classification	WHMIS: Product is listed as uncontrolled product.
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Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
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Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.
 Telephone Number: 514-337-3331
 Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.
 Telephone Number: 514-337-3331
 Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canutec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
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TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
UN-Proper Shipping Name: Not Regulated
Transport Hazard Class: None on finished product
Packing Group: None on finished product
Marine Pollutant: None on finished product
Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
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Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

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MULTI-MIX® MM-3000C

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1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
UN-Proper Shipping Name: Not Regulated
Transport Hazard Class: None on finished product
Packing Group: None on finished product
Marine Pollutant: None on finished product
Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.
 Telephone Number: 514-337-3331
 Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.
 Telephone Number: 514-337-3331
 Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
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TSCA	Product is listed.
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Canadian Classification	WHMIS: Product is listed as uncontrolled product.
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Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

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Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
UN-Proper Shipping Name: Not Regulated
Transport Hazard Class: None on finished product
Packing Group: None on finished product
Marine Pollutant: None on finished product
Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

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Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

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Prepared by: Chemical Filtration Department
 Circul-Aire Inc.
 Telephone Number: 514-337-3331
 Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.
 Telephone Number: 514-337-3331
 Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

 Telephone Number: 514-337-3331

 Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

Storage Temperature: Ambient. Avoid storing at high temperatures.
Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.
 Telephone Number: 514-337-3331
 Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

8.4.1. Eye protection: Safety glasses or goggles with side shields;

8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number: None on finished product
 UN-Proper Shipping Name: Not Regulated
 Transport Hazard Class: None on finished product
 Packing Group: None on finished product
 Marine Pollutant: None on finished product
 Information reported for product/size: 0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
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TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
 Circul-Aire Inc.
 Telephone Number: 514-337-3331
 Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.



MATERIAL SAFETY DATA SHEET

Canadian Center for Occupational Health and Safety

This format is consistent with WHMIS schedule I, column III, and ANSI Z400.1-2004 standard for preparation of MSDS's in accordance with Globally Harmonized System of Classification and Labeling of Chemicals, as well as OSHA's Hazard Communication Standard, 29 CFR 1910. 1200.

MULTI-MIX® MM-3000C

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier Multi-Mix® MM-3000C

1.2. Manufacture **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
Activated Carbon (coal based)	>95	7440-44-0	231-153-3
Dehydrogenate Oxide	<5	7732-18-5	231-791-2

SECTION 4: FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

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Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

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MULTI-MIX® MM-3000C

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Canada H4R 1R2
Telephone No.: 514-337-3331
Fax No.: 514-336-3023

1.3. Supplier Identifier **Circul-Aire Inc.**
3999 Cote Vertu
Montreal, Quebec
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Fax No.: 514-336-3023

1.4. Emergency telephone number
514-337-3331
Canotec (Canada): 1 (613) 996-6666 (24 hours)
Or *666 on a cellular phone

1.5. Product use Gas-phase air filtration

SECTION 2: HAZARDS IDENTIFICATION

2.1. Most Important Hazards:

- In confined space, wet MM-3000/MM-3000LP may remove oxygen from air causing severe hazards for workers entering such spaces. Before and during the entrance of a confined space all local, state and federal regulations should be followed.
- If crushed or handled extensively, dust may evolve and can be irritating to the eyes, skin, and respiratory tract.

2.2. Regulatory status

Canadian WHIMS classification: Not regulated

OSHA regulatory status: Not regulated

HMIS Ratings: _____

Health	0	4 = Extreme / Severe 3 = High / Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
Flammability	1	
Reactivity	0	
Special		

GHS Classification:

Category 2B: Eye irritation

Category 3: Respiratory irritation



2.3. Potential health effects

Medical conditions aggravated by exposure: People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Ingredients (Component)	Approximate Concentration %wt	CAS NA or UN Numbers	EC Number
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Dehydrogenate Oxide	<5	7732-18-5	231-791-2

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As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person

4.1. Description of first aid measures

In the event of exposure by inhalation:

Move the affected person away from the contaminated area and into fresh air. Seek medical attention for any breathing difficulty.

In the event of contact with eyes:

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Seek medical attention.

In the event of contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc. Rinse with plenty of water. Seek medical attention

In the event of swallowing:

Drink plenty of water. Seek medical attention, showing the label. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label and/or in section 11.

SECTION 5: FIREFIGHTING MEASURES

5.1. Suitable methods of extinction: Use an extinguishing media suitable for surrounding the fire.

If involved in fire, flood with plenty of water.

If possible to do safely, move smoldering MULTI-MIX[®] MM-3000C to a non-hazardous area, preferably out of doors. Avoid stirring up dust clouds.

Unsuitable methods of extinction: None to our knowledge.

5.2. Special hazards arising from the substance or mixture

MULTI-MIX[®] MM-3000C is difficult to ignite and tends to burn slowly (smolder) without producing smoke and flame.

Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

Contact with strong oxidizer such as ozone or liquid oxygen may cause rapid combustion.

5.3. Firefighting equipment

Fire fighting personnel should wear NIOSH approved self-contained breathing apparatus for all inside fires and large outdoor fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill..

6.2. Environmental precautions

The material is not water soluble. The dust and fine particles can cause a particulate emission if discharged to waterway. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.

6.3. Methods and material for containment and cleaning up

Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal.

Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation.

6.4. Reference to other sections

No data available.

SECTION 7: HANDLING AND STORAGE

Requirements relation to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

- 7.1.1. Observing all government regulations.
- 7.1.2. Use with adequate exhaust ventilation to draw dust away from workers' breathing zones.
- 7.1.3. Prevent or minimize to dusts by using appropriate respirators, gloves and eye protection.
- 7.1.4. Wash exposed skin areas thoroughly with soap and water after handling.

7.2. Conditions for safe storage

- Storage Temperature: Ambient. Avoid storing at high temperatures.
- Storage Pressure: Atmospheric.

MULTI-MIX[®] MM-3000C should be stored in a closed dry container, and away from ignition source.

Product should be protected from water and exposure to contaminated air; otherwise the product may be rendered useless.

Not suitable Package Materials:

Porous materials allowing contact with water, air, and contaminants contained therein.

Packaging

Always keep in packaging made of an identical material to the original.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits

Component	OSHA PEL	ACGIH TLV	Others
Activated Carbon	Date not available	Date not available	

8.2. Exposure Guidelines

Wet MULTI-MIX[®] MM-3000C removes oxygen from air causing a severe hazard to workers inside MULTI-MIX[®] MM-3000C vessels and enclosed or confined spaces. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state (province) and federal regulations.

8.3. Exposure controls

Use local exhaust ventilation to control emissions near the source. Ventilation systems should be sized and configured to prevent exceeding recommended or regulated exposure limits. Handle in a well-ventilated area.

If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.

8.4. Personal protection measures, such as personal protective equipment

Use of NOISH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed.

- 8.4.1. Eye protection: Safety glasses or goggles with side shields;
- 8.4.2. Skin protection: Rubber or plastic gloves and wear appropriate dust resistant clothing, full covers arms and legs.

8.4.3. Respiratory protection: NOISH approved dust mask

8.4.4. General hygiene considerations: Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid chips	Color	Black
Odor	None	Odor threshold	None
pH	Not applicable	Specify Gravity	Packed density 0.43-0.47g/cc
Vapor pressure (mm)	Not applicable	Vapor Density (Air=1)	Not applicable
Evaporation Rate	Not applicable		
Boiling point (°C)	Not applicable	Freezing Point (°C)	Not applicable
Coefficient of Water / oil Distribution	Not applicable	Flash point (°C)	Not applicable
Upper explosion limit (% by volume)	Not applicable	Lower explosion limit (% by volume)	Not applicable
Explosive power	Not applicable	Sensitivity to static discharge	Not applicable

9.2. Other information

Ignition Temperature >220°C

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under the specified conditions of storage, shipment and use.

10.2. Condition to avoid

Avoid storing at high temperature or ignition sources..

10.3. Incompatibility to Other Substance

Contact with strong oxidizers may result in rapid combustion.

10.4. Hazardous decomposition products

Carbon monoxide and carbon dioxide gas may be generated during combustion of this material.

10.5. Reactivity and under what conditions:

High concentration of organic chemicals in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes cause a bed temperature rise due to adsorption and oxidation.

SECTION 11: TOXICOLOGICAL INFORMATION

This material is non-toxic in its original state.

11.1. Effects of acute exposure to products

Toxicological studies: LD₅₀ on finished product (Specify species and route): Not determined
LC₅₀ on finished product (Specify species and route): Not determined

11.2. Effects of chronic exposure to products: Not determined

Irritation: Dust may cause mild irritation to skin or eyes, possibly reddening.

Mutagenicity: Not determined on this finished product

Carcinogenicity: Not determined on this finished product

Reproductive toxicant: Not determined on this finished product

Specific target organ systemic toxicity – single exposure: Not determined on this finished product

Specific organ systemic toxicity – repeated exposure: Not determined on this finished product

SECTION 12. ECOLOGICAL INFORMATION

This material, in its original state, is not harmful to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state (or province) and federal laws and regulations.

Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbed material that carbon picks up. Consult with the US EPA Guideline listed in 40CFR Part 261.3 or Canadian Council of Ministers of the Environment's "National Guidelines For Hazardous Waste Landfills" for the classifications of hazardous waste prior to disposal.

SECTION 14. TRANSPORTATION INFORMATION

LAND

DOT Regulations:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Packing Group: None on finished product

Marine Pollutant: None on finished product

WATER

IMO/IMDG:

UN/NA Identification Number: None on finished product

UN-Proper Shipping Name: Not Regulated

Transport Hazard Class: None on finished product

Marine Pollutant: None on finished product

AIR

ICAO/IATA:

UN/NA Identification Number:	None on finished product
UN-Proper Shipping Name:	Not Regulated
Transport Hazard Class:	None on finished product
Packing Group:	None on finished product
Marine Pollutant:	None on finished product
Information reported for product/size:	0.5 kg

Note 1: Under the UN classification for activated carbon, all activated carbon have been identified as a class 4.2 product. However, this product has been tested according to *the United Nations Transport of Dangerous Goods* test protocol for a “self-heating substance” (*United Nations Transport of Dangerous Goods, Manual of Tests and Criteria, Part II, Section 33.3.1.6 - Test N.4 – Test Method for Self Heating Substances*) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material.

SECTION 15. REGULATORY INFORMATION

SARA Title III 302	Product is not subject to SARA Title III, section 302 regulation.
SARA Title III 313	Product is not subject to SARA Title III, section 313 regulation.
TSCA	Product is listed.
California Proposition 65	Product is not listed.
Canadian Classification	WHMIS: Product is listed as uncontrolled product.
	DSL #: Product is listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.	
Risk and Safety Phrases	R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.
Carbon, activated (CAS: 7440-44-0) is found on the following regulatory lists:	Canada – British Columbia Occupational Exposure Limits Canada – Yukon Permissible Concentrations for Airborne Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: Chemical Filtration Department
Circul-Aire Inc.

Telephone Number: 514-337-3331

Date prepared: September 25, 2015

DISCLAIMER: In Canada, regulatory authorities have agreed to allow the use of the 16-heading format, provided that all of the MSDS information required under the Controlled Products Regulations is included and that a statement on the MSDS indicated that (1) the product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and (2) the MSDS contains all the information required by those regulations.