

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.

M U L T I - M I X ® M M - 2 0 0 0 H F

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

- 1.1. Product Identifier** Multi-Mix® MM-2000HF
- 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**
1-514-337-3331
Canutec (Canada): 1-613-996-6666 (24 hours)
Or *666 on a cellular phone

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

This substance does not present a physical hazard.

This substance does not present an environmental hazard.

In compliance with directives 67/548/EEC, 1999/45/EC and their amendments

This substance does not present a physical hazard.

This substance does not present a health hazard with the exception of possible occupational exposure thresholds.

This substance does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

2.2. Label elements

In compliance with EC regulation No. 1272/2008 and its amendments

Additional labeling:

Hazard statements:

In compliance with directives 67/548/EEC, 1999/45/EC and their amendments

Safety phrase:

S22 Do not breathe dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Composition:

Identification	(EC) 1272/2008	67/548/EEC	Note	%
INDEX: 1344_28_1 CAS: 1344-28-1 EC: 215-691-6 REACH: 01-2119529248-35 ALUMINUM OXIDE			[1]	100%

Information on ingredients:

[1] Substance for which maximum workplace exposure limits are available

3.2. Mixtures

No substances fulfill the criteria set forth in annex II section A of the REACH regulation (EC) n° 1907/2006

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.

In the event of splashes or contact with eyes:

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

If there is any redness, pain or visual impairment, consult an ophthalmologist.

In the event of splashes or contact with skin:

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

Rinse with plenty of water.

In the event of swallowing:

Seek medical attention, showing the label.

Rinse mouth out with water.

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.

4.3. Indication of any immediate medical attention and special treatment needed

Symptomatic treatment.

SECTION 5: FIREFIGHTING MEASURES

Non-Flammable

5.1. Extinguishing media

Suitable methods of extinction

All extinguishing agents can be used.

Unsuitable methods of extinction

None to our knowledge. If there is a fire close by, use suitable extinguishing agents.

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed:

- Carbon dioxide (CO₂)

5.3. Advice for firefighters

No data available

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Since the product is in the form of balls, it can cause the floor to be very slippery.

For fire-fighters

Fire-fighters will be equipped with suitable personal protective equipment (see section 8)

6.2. Environmental precautions

Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up

Retrieve the product by mechanical means (sweeping/vacuuming).

If necessary, wash with water following recovery

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

Always wash hands after handling.

Remove and wash contaminated clothing before re-using. Does not require any specific any specific or particular measures.

Avoid the formation or spread of dust in the atmosphere.

Ventilation.

Do not mix with incompatible materials (see list section 10).

Fire prevention:

Prevent access by unauthorized personnel.

Recommended equipment and procedures:

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Prohibited equipment and procedures:

No smoking, eating or drinking in areas where the substance is used.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

Storage

Keep away from incompatible materials.

Keep the container tightly closed in a cool, well ventilated place.

To guarantee the quality and properties of the product keep protected from humidity and bad weather conditions.

Packaging

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

7.3. Specific end use(s)

No data available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits:

- ACGIH TLV (American Conference of Governmental Industrial Hygienists, Threshold Limit Values, 2010):

CAS	TWA:	STEL:	Ceiling:	Definition:	Criteria:
1344-28-1	10 mg/m ³	-	-	-	-

- Australia (NOHSC: 3008, 1995)

CAS	TWA:	STEL:	Ceiling:	Definition:	Criteria:
1344-28-1	10 mg/m ³	-	-	-	-

- Belgium (Order of 19/05/2009, 2010):

CAS	TWA:	STEL:	Ceiling:	Definition:	Criteria:
1344-28-1	10 mg/m ³	-	-	-	-

- Canada/Alberta (Occupational health and safety code, 2009):

CAS	TWA:	STEL:	Ceiling:	Definition:	Criteria:
1344-28-1	10 mg/m ³	-	-	-	-

- Canada/British Colombia (2009):

CAS	TWA:	STEL:	Ceiling:	Definition:	Criteria:
1344-28-1	10 mg/m ³	20 mg/m ³	-	-	T

- Canada/Quebec (Regulations on occupational health and safety):

CAS	TWA:	STEL:	Ceiling:	Definition:	Criteria:
1344-28-1	10 mg/m ³	-	-	-	T

- China (GBZ 2.1, 2007)

CAS	TWA:	STEL:	Ceiling:	Definition:	Criteria:
1344-28-1	4 mg/m ³	6 mg/m ³	-	-	T

- Denmark (2007):

CAS	TWA:	STEL:	Ceiling:	Definition:	Criteria:
1344-28-1	-	5 mg/m ³	-	-	-

- France (INRS – ED984: 2008):

CAS	VME-ppm:	VME-mg/m ³ :	VLE-ppm:	VLE-mg/m ³ :	Notes:
1344-28-1	-	10	-	-	-

- Hong-Kong (Code of practice on control of air impurities (Chemical substances) in the workplace, 04/2002):

CAS	TWA:	STEL:	Ceiling:	Definition:	Criteria:
1344-28-1	10 mg/m ³	-	-	-	I

- Ireland (code of practice for the safety, health and welfare at work, 2010):

CAS	TWA:	STEL:	Ceiling:	Definition:	Criteria:
1344-28-1	4 mg/m ³	-	-	-	R

- Japan (JSOH, 20/05/2009):

CAS	TWA:	STEL:	Ceiling:	Definition:	Criteria:
1344-28-1	0.5 mg/m ³	-	-	-	R

- Malaysia:

CAS	TWA:	STEL:	Ceiling:	Definition:	Criteria:
1344-28-1	10 mg/m ³	-	-	-	-

- Norway (veiledning om administrative normer for forurensning i arbeidsatmasfaere, May 2007):

CAS	TWA:	STEL:	Ceiling:	Definition:	Criteria:
1344-28-1	10 mg/m ³	-	-	-	-

- Sweden (AFS 2007:2):

CAS	TWA:	STEL:	Ceiling:	Definition:	Criteria:
1344-28-1	2 mg/m ³	-	-	-	R

- USA/OSHA PEL (Occupational Safety and Health Administration, Permissible Exposure Limits):

CAS	TWA:	STEL:	Ceiling:	Definition:	Criteria:
1344-28-1	5 mg/m ³	-	-	-	R

- UK/WEL (Workplace exposure limits, EH40/2005, 2007):

CAS	TWA:	STEL:	Ceiling:	Definition:	Criteria:
1344-28-1	10 mg/m ³	-	-	-	TI

Derived no effect level (DNEL) or derived minimum effect level (DMEL):

ALUMINA/BOEHMITE: DNEL 3000 µG/M³ (in Al₂O₃)

Predicted no effect concentration (PNEC):

Environmental compartment: Fresh water 0.0749
 PNEC: mg/l
 Environmental compartment: Waste water treatment plant
 PNEC: 20 mg/l

8.2. Exposure controls

Personal protection measres, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE).

Use personal protective equipment that is clean and has been properly maintained. Store personal protective equipment in a clean place, away from work area.

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.

Eye/face protection

Avoid contact with eyes.

Before handling powders or dust emission, wear mask goggles in accordance with standard EN166. Safety spectacles with side shields.

Hand protection

Wear suitable protective gloves in the event of prolonged or repeated skin contact.

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.

Gloves must be selected according to the application and duration of use at workstation.

Protective gloves need to be selected according to their suitability for the workstation in question: other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.

Types of gloves recommended:

- Natural latex
- Nitrile rubber (butadiene-acrylonitrile copolymer rubber (NBR))
- Neoprene® (Polychloroprene)
- PVC (polyvinyl chloride)

Recommended properties:

- Impervious gloves in accordance with standard EN374

Body protection

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed. Protective clothing with elasticated cuffs and closed neck.

Respiratory protection

Avoid breathing dust.

Type of FFP mask:

Wear a disposable half-mask dust filter in accordance with standard EN149.

- Category: FFFP1

Particle filter according to standard EN143:

- P1 (white)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

General information:

Physical state:	Solid in granules.
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Important health, safety and environmental information

pH:	Not relevant.
Boiling point/boiling range:	Not relevant.
Flash point interval:	Not relevant.
Vapor pressure (50°C):	Not relevant.
Density:	<1
Water solubility:	Insoluble.
Melting point/melting range:	2000°C
Self-ignition temperature:	Not relevant.
Decomposition point/decomposition range:	Not relevant.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

This substance is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Avoid:

formation of dusts

10.5. Incompatible materials

Keep away from:

- Strong acids
- Strong bases
- Strong oxidizing agents

10.6. Hazardous decomposition products

The thermal decomposition may release/form:

- Carbon monoxide (CO)
- Carbon dioxide (CO₂)

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

No data available.

11.1.1. Substances

This substance does not present a health hazard.

Acute toxicity

ALUMINUM OXIDE (CAS: 1344-28-1)

Oral route:

DL50>2000 mg/kg

Species: Rat

OCDE Ligne directrice 401 (Toxicité aiguë par voie orale)

Inhalation route :

LC50>2.3 mg/l

Species : Rat

OCDE Ligne directrice 403 (Toxicité aiguë par inhalation)

Skin corrosion/skin irritation:

Negative

Serious damage to eyes/eye irritation:

May cause slight temporary irritation

Respiratory or skin sensitization:

Negative

Germ cell mutagenicity:

Negative

Carcinogenicity:

Negative

Reproductive toxicant:

Negative

Specific target organ systemic toxicity – single exposure:

Negative

Specific organ systemic toxicity – repeated exposure:

Negative

Symptoms related to the physical, chemical and toxicological characteristics:

No data

12. ECOLOGICAL INFORMATION

12.1. Toxicity

No effects are expected from this insoluble product because insolubility leads to non-bioavailability.

12.1. Substances

Fish toxicity: LC50>100 mg/l
Species: Salmo trutta
Duration of exposure: 96h
OCDE Ligne directrice 203 (poisson, essai de toxicité aiguë)

Crustacean toxicity : EC50>100 mg/l
Species: Daphnia magna
Duration of exposure: 48h
OCDE Ligne directrice 202 (Daphnia sp., essai d'immobilisation immédiate)

Algae toxicity : ECr50>100 mg/l
Species : Selenastrum capricornutum
Duration of exposure: 72h
OCDE Ligne directrice 201 (algues, essai d'inhibition de la croissance)

12.1. Persistence and degradability

Inert mineral product. Not degradable

12.2.1. Substances

Biodegradability: No degradability data is available, the substance is considered as not degrading quickly.

12.3. Bioaccumulative potential

Slightly bioaccumulable.

12.4. Mobility in soil

Slightly soluble product, readily forms deposits.

12.5. Results of PBT and vPvB assessment

Complies with annexe XIII of regulation CE 1907/2006 (REACH): not applicable to inorganic substances

12.6. Other adverse effects.

No data available.

13. DISPOSAL CONSIDERATIONS

Proper waste management of substance and/or container must be determined in accordance with Directive 2008/98/EC.

Unused material may be incinerated or landfilled in facilities meeting local regulations.

13.1. Waste treatment methods

Do not pour into drains and waterways

Waste

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

The exhausted catalysts may have different risks and properties compared to the original product.

This safety data sheet is not applicable to exhausted catalysts.

Soiled packaging

Empty container completely. Keep label(s) on container.

Empty containers should be taken to local recyclers for disposal. Refer to local regulations.

Codes of wastes (Decision 2001/573/EC, Directive 2006/12/EEC, Directive 94/31/EEC on hazardous waste):

06 03 16 metallic oxides other than those mentioned in 06 03 15

14. TRANSPORTATION INFORMATION

Exempt from transport classification and labeling.

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2013 – IMDG 2012 – ICAO/IATA 2013).

15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation

Classification and labeling information included in section 2:

The following regulations have been used:

- Directive 67/548/EEC and its adaptations – Directive 1999/45/EC and its adaptations
- Regulation EC 1272/2008 modified by regulation EC 618/2012

Container information:

No data available

Particular provisions:

No data available

15.2. Chemical safety assessment

No data available

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: February 14, 2014

Abbreviations:

PNEC: Predicted No-Effect Concentration.

ADR: European agreement concerning the international carriage of Dangerous goods by road.

IMDG: International Maritime Dangerous Goods.

IATA: International Air Transport Association.

ICAO : International Civil Aviation Organisation.

RID: Regulations concerning the International carriage of Dangerous goods by rail.

WGK: Wassergefährdungsklasse (Water Hazard Class).

PROC: Process Category.

ERC: Environment Release Category

PC: Market sector by type of Chemical Product

SU: Sector end of Use

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.