

# MATERIAL SAFETY DATA SHEET

## SECTION I - MATERIAL IDENTIFICATION AND USE

<b>PRODUCT IDENTIFIER:</b> <i>MM-1337, MM-1346, MM-1355, MM-1364, MM-1373</i>	<b>MANUFACTURER'S NAME &amp; ADDRESS:</b> CIRCUL-AIRE® Circul-Aire Inc. 3999 Cote Vertu Montreal, Quebec Canada H4R 1R2
<b>TRADE NAME:</b> <i>MM-1337, MM-1346, MM-1355, MM-1364, MM-1373</i>	<b>TELEPHONE NO.:</b> 514-337-3331 <b>FAX NO.:</b> 514-336-3023
<b>CHEMICAL IDENTITY:</b> <i>Activated carbon, aluminum oxide and aqueous potassium permanganate</i>	<b>SUPPLIER'S NAME &amp; ADDRESS:</b> CIRCUL-AIRE® Circul-Aire Inc. 3999 Cote Vertu Montreal, Quebec Canada H4R 1R2
<b>SYNONYMS:</b> <i>MM-1337, MM-1346, MM-1355, MM-1364, MM-1373</i>	<b>EMERGENCY TELEPHONE NO.:</b> <b>514-337-3331</b>
<b>CHEMICAL FORMULA:</b> $C + Al_2O_3 + H_2O + KMnO_4$	<b>MOLECULAR WEIGHT:</b> N/A
<b>CHEMICAL FAMILY:</b> <i>Inorganic</i>	
<b>MATERIAL USE:</b> <i>Air Purification</i>	

## SECTION II - HAZARDOUS INGREDIENTS OF MATERIAL

Hazardous Ingredients	Approximate Concentrations %	C.A.S. N.A. or U.N. Numbers	"Exposure Limits"	LD <sub>50</sub> / LC <sub>50</sub> Specify Species & Route
<i>Carbon</i>	20-60	7440-44-0	N/A	LD <sub>50</sub> > 10g/kg Oral-RAT
<i>Potassium permanganate</i>	1.8-3.3	7722-64-7	C 5 mg m <sup>-3</sup> in air as Mn PEL 10 mg m <sup>-3</sup> of total dust	
<i>Aluminium oxide</i>	34-63	1344-28-7	5 mg m <sup>-3</sup> of air respirable dust	

## SECTION III - PHYSICAL DATA FOR MATERIAL

Physical State Gas <input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input checked="" type="checkbox"/>	Odor and Appearance <i>Odorless purple pellets and black granules</i>	Odor Threshold (p.p.m.) N/A	Specify Gravity <i>Packed density 0.6-0.8 g/cc</i>
Vapor Pressure (mm) N/A	Vapor Density (Air=1) N/A	Evaporation Rate N/A	Freezing Point (°C) N/A
Solubility in Water (20°C) 1.8-3.3%	% Volatile (by volume) 6-9% (H <sub>2</sub> O)	pH 8.0	Coefficient of water/oil distribution N/A

## SECTION IV - FIRE AND EXPLOSION HAZARD OF MATERIAL

Flammability Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	If yes, under which conditions: <i>Ignition temperature &gt; 300°C</i>
Means of Extinction <i>If involved in fire, flood with plenty of water.</i>	
Special Procedures <i>Moderate fire hazard by chemical reaction, oxidizer. Do not heat or rub with easily oxidizable matter. Keep away from heat and flammable materials. Since wet activated carbons adsorb oxygen, do not enter a closed area without using a self-contained breathing apparatus.</i>	
Flashpoint (°C) and Method N/A	Upper explosion limit (% by volume) N/A
Auto Ignition Temperature (°C) N/A	Lower explosion limit (% by volume) N/A
Hazardous Combustion Products <i>CO may be generated in the event of combustion.</i>	
Explosion Data Sensitivity to Mechanical Impact N/A	Rate of Burning N/A
Explosive Power N/A	Sensitivity to Static Discharge N/A

## SECTION V - REACTIVITY DATA

Chemical Stability Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	If no, under which conditions:
Incompatibility to other substances Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	If so, which ones? <i>Strong acids, oxidizable matter and reducing matter. Strong oxidizers such as ozone, liquid oxygen and chlorine, etc.</i>
Reactivity and under what conditions <i>Do not heat or rub in contact with easily oxidizable matter.</i>	
<i>Keep away from heat and flammable materials.</i>	
Hazardous Decomposition Products <i>In contact with hydrochloric acid, chlorine will evolve.</i>	
<i>Carbon monoxide may be generated in the event of fire.</i>	

**MATERIAL NAME/IDENTIFIER:** MM-1337, MM-1346, MM-1355, MM-1364, MM-1373

**SECTION VI - TOXICOLOGICAL PROPERTIES OF PRODUCT**

Route of Entry  Skin Contact  Skin Absorption  Eye Contact  Inhalation Acute  Inhalation Chronic  Ingestion

Effects of Acute Exposure to Product

*May irritate mucous membranes and upper respiratory tract.*

Effects of Chronic Exposure to Product

*Prolonged inhalation of manganese compounds above the threshold limit value may cause lung irritation and central nervous system disorders.*

LD<sub>50</sub> of Product (Specify Species and Route)

*N.D.*

Irritancy of Product

*N.D.*

Exposure Limits of Product

*C 5 mg m<sup>-3</sup> air as Mn*

LC<sub>50</sub> of Product (Specify Species)

*N.D.*

Sensitization to Product

*N.D.*

Synergistic Materials

*N.D.*

Carcinogenicity

Reproductive effects

*N/A*

Teratogenicity

Mutagenicity

**SECTION VII - PREVENTIVE MEASURES**

Personal Protective Equipment

*Normal work clothes*

Gloves (Specify)

*Rubber*

Respiratory (Specify)

*Particulate mask*

Eye (Specify)

*Safety glasses/goggles*

Footwear (Specify)

*N/A*

Clothing (Specify)

*Full clothing*

Other (Specify)

*N/A*

Engineering Controls (e.g. ventilation, enclosed process, specify)

*Handle in a well-ventilated area*

Leak and Spill Procedure

*Sweep up as much as possible; flush floors with abundant quantities of water into sewer, if permitted by Government regulations.*

Waste Disposal

*Dispose of in accordance with all Government regulations.*

Handling Procedures and Equipment *Wet (MM-1337, 1346, 1355, 1364, 1373) removes oxygen from air causing a severe hazard to workers inside vessels and enclosed or confined spaces. Before entering such areas, sampling and work procedures for low oxygen levels should be taken to ensure ample oxygen\*\*\**

Storage Requirements

*Store in a closed container in a cool dry area away from incompatible materials.*

Special Shipping Information

**SECTION VIII - FIRST AID MEASURES**

Skin

*Wash contaminated area with copious amounts of water.*

Eye

*Flush eyes with the eyelids open for 15 minutes. Consult a physician.*

Inhalation

*Move to clean air. Consult a physician.*

Ingestion

*Give lemon or orange juice to drink; in addition, milk or sugar solution may be given. Consult a physician.*

General Advice

*Wash hands before eating or smoking. Wash contaminated clothing.*

**SECTION IX - PREPARATION, DATE OF M.S.D.S.**

Additional Information

*WHMIS CLASS C*

Sources Used

*MSDS for MM-1000 and MM-3000*

Prepared by:

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Telephone Number

*514-337-3331*

Date

*February 2009*

**N/A - NOT APPLICABLE**

**N.D. - NOT DETERMINED**

**Circul-Aire Inc. requests the users of this product to study this Material Safety Data Sheet (MSDS) and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify its employees, agents and contractors of the information on this MSDS and any product hazards and safety information, (2) furnish this same information to each of its customers for the product, and (3) request such customers to notify their employees and customers for the product of the same product hazards and safety information.**