

MATERIAL SAFETY DATA SHEET

SECTION I - MATERIAL IDENTIFICATION AND USE

PRODUCT IDENTIFIER: <i>MM-1000</i>	MANUFACTURER'S NAME & ADDRESS: Circul-Aire Inc. 3999 Cote Vertu Montreal, Quebec Canada H4R 1R2
TRADE NAME: <i>MM-1000</i>	TELEPHONE NO.: (1) 514-337-3331 FAX NO.: (1) 514-336-3023
CHEMICAL IDENTITY: <i>Aluminum oxide and aqueous potassium permanganate</i>	
SYNONYMS: <i>MM-1000</i>	SUPPLIER'S NAME & ADDRESS: Circul-Aire Inc. 3999 Cote Vertu Montreal, Quebec Canada H4R 1R2
CHEMICAL FORMULA: $Al_2O_3 + H_2O + KMnO_4$	EMERGENCY TELEPHONE NO.: (1) 514-337-3331
CHEMICAL FAMILY: <i>Inorganic oxidizer</i>	
MATERIAL USE: <i>Air purification</i>	MOLECULAR WEIGHT: <i>N/A</i>



SECTION II - HAZARDOUS INGREDIENTS OF MATERIAL

Hazardous Ingredients	Approximate Concentrations %	C.A.S. N.A. or U.N. Numbers	"Exposure Limits"	LD ₅₀ / LC ₅₀ Specify Species & Route
<i>Potassium permanganate</i>	4	7722-64-7	<i>C 5mg m⁻³ in air as Mn</i>	
<i>Aluminum oxide</i>	75-85	1344-28-1	<i>PEL 10mg m⁻³ of total dust 5 mg m⁻³ of air respirable dust</i>	

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</i>	Odor Threshold (p.p.m.) <i>N/A</i>	Specify Gravity <i>3.0 - 3.7</i>
Vapor Pressure (mm) <i>N/A</i>	Vapor Density (Air=1) <i>N/A</i>	Evaporation Rate <i>N/A</i>	Boiling Point (°C) <i>N/A</i>
Solubility in Water (20°C) <i>4%</i>	% Volatile (by volume) <i>16 (H₂O)</i>	pH <i>8.0</i>	Freezing Point (°C) <i>N/A</i>
			Coefficient of water/oil distribution <i>N/A</i>

SECTION IV - FIRE AND EXPLOSION HAZARD OF MATERIAL

Flammability Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	If yes, under which conditions:		
Means of Extinction <i>Large quantities of water, CO₂, foam.</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.</i>			
Flashpoint (°C) and Method <i>N/A</i>	Upper explosion limit (% by volume) <i>N/A</i>	Lower explosion limit (% by volume) <i>N/A</i>	
Auto Ignition Temperature (°C) <i>N/A</i>	Hazardous Combustion Products <i>N/A</i>		
Explosion Data Sensitivity to Mechanical Impact <i>N/A</i>	Rate of Burning <i>N/A</i>	Explosive Power <i>N/A</i>	Sensitivity to Static Discharge <i>N/A</i>

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.</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>

MATERIAL NAME/IDENTIFIER: MM-1000

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 ₅₀ of Product (Specify Species and Route) <i>N.D.</i>	Irritancy of Product <i>N.D.</i>	Exposure Limits of Product <i>C 5mg m⁻³ air as Mn</i>
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LC ₅₀ of Product (Specify Species) <i>N.D.</i>	Sensitization to Product <i>N.D.</i>	Synergistic Materials <i>N.D.</i>
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Carcinogenicity Reproductive effects Teratogenicity Mutagenicity
N/A

SECTION VII - PREVENTIVE MEASURES

Personal Protective Equipment
Normal work clothes

Gloves (Specify) <i>Rubber or plastic</i>	Respiratory (Specify) <i>Particulate mask</i>	Eye (Specify) <i>Safety glasses</i>	Footwear (Specify) <i>N/A</i>
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Clothing (Specify) <i>Full clothing</i>	Other (Specify) <i>N/A</i>
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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
Avoid skin contact and breathing of dust. Handle in a well-ventilated area.

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
Chemical literature, KMnO₄ MSDS from Carus Chemical Co., Alumina MSDS from Alcan-Chemicals (CANADA)

Prepared by: <i>Christopher Flaherty</i>	Telephone Number <i>(1) 514-337-3331</i>	Date <i>February 2009</i>
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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.