

SECTION 1) CHEMICAL PRODUCT AND SUPPLIER'S IDENTIFICATION

CAS Number: 1313-13-9
Product Name: Manganese (IV) Oxide, 99+%
Revision Date: Jul 20, 2021 **Date Printed:** Mar 07, 2023
Version: 1.0 **Supersedes Date:** N.A.
Manufacturer's Name: Thames River Chemical Corp.
Address: 5230 Harvester Road Burlington, ON, CA, L7L 4X4
Emergency Phone: CHEMTREC (800) 424-9300
Information Phone Number: 905-681-5353
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Product/Recommended Uses: For laboratory or industrial use only.

SECTION 2) HAZARDS IDENTIFICATION**Classification**

Acute toxicity Inhalation Vapor - Category 4
Acute toxicity Oral - Category 4
Eye Irritation - Category 2A
Reproductive Toxicity - Category 2
Specific Target Organ Toxicity - Repeated Exposure - Category 2

Safety data sheet prepared in accordance to the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

Pictograms**Signal Word**

Warning

Hazardous Statements - Health

H332 - Harmful if inhaled
H302 - Harmful if swallowed
H319 - Causes serious eye irritation
H361 - Suspected of damaging fertility or the unborn child
H373 - May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements - General

P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.
P103 - Read label before use.

Precautionary Statements - Prevention

P271 - Use only outdoors or in a well-ventilated area.

- P264 - Wash/Wash hands thoroughly after handling.
- P270 - Do not eat, drink or smoke when using this product.
- P280 - Wear protective gloves, protective clothing, eye protection/face protection.
- P201 - Obtain special instructions before use.
- P202 - Do not handle until all safety precautions have been read and understood.
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray.

Precautionary Statements - Response

- P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P312 - Call a POISON CENTER or doctor, if you feel unwell.
- P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor, if you feel unwell.
- P330 - Rinse mouth.
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337 + P313 - If eye irritation persists: Get medical advice/attention.
- P308 + P313 - IF exposed or concerned: Get medical advice/attention.
- P314 - Get Medical advice/attention if you feel unwell.

Precautionary Statements - Storage

- P405 - Store locked up.

Precautionary Statements - Disposal

- P501 - Dispose of contents/container in accordance with local/national/international regulation. Waste management should be in full compliance with national, regional and local laws.

SECTION 3) COMPOSITION/INFORMATION ON INGREDIENTS

CAS	Chemical Name	% By Weight
0001313-13-9	MANGANESE DIOXIDE	100%

SECTION 4) FIRST-AID MEASURES

Inhalation

Remove source of exposure or move person to fresh air and keep comfortable for breathing. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by the POISON CENTER/doctor. Get Medical advice/attention if you feel unwell. If exposed/If you feel unwell/If concerned: Call a POISON CENTER or doctor.

Eye Contact

Gently brush product off face. Do not rub eyes. Let the eyes water naturally for a few minutes. Look right and left, then up and down. If eye irritation persists: Get medical advice/attention. Do not attempt to manually remove anything from the eyes. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for a duration of 15-20 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face.

Skin Contact

Wash with plenty of lukewarm, gently flowing water for a duration of 15-20 minutes or until medical aid is available. If skin irritation occurs: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention. Take off immediately all contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Wash contaminated clothing before re-use or discard.

Ingestion

Rinse mouth. If exposed/If you feel unwell/If concerned: Call a POISON CENTER or doctor.

Most important symptoms and effects, both acute and delayed

No data available.

Indication of any immediate medical attention and special treatment needed

Treat according to symptoms (decontamination, vital functions), no known specific antidote. Treatment should be supportive and based on the judgement of the physician in response to the reaction of the patient.

SECTION 5) FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Small Fire : Dry chemical, foam, carbon dioxide, water-spray or alcohol-resistant foam. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Large Fire : Water spray, fog or alcohol-resistant foam.

Unsuitable Extinguishing Media

Do not use straight stream of water.

Specific Hazards in Case of Fire

Fire will produce irritating and toxic gases.

Fire-fighting Procedures

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Cool containers with flooding quantities of water until well after fire is out. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

Special Protective Actions

Wear protective pressure self-contained breathing apparatus (SCBA) and full turnout gear.

SECTION 6) ACCIDENTAL RELEASE MEASURES**Emergency Procedure**

Isolate hazard area and keep unauthorized personnel away. Ventilate closed spaces before entering. Do not touch damaged containers or spilled materials unless wearing appropriate protective clothing. Evacuate persons not wearing protective equipment from area of spill until clean-up is complete.

Recommended Equipment

Breathing protection is required. Wear chemical protective clothing and positive pressure self-contained breathing apparatus (SCBA).

Personal Precautions

Do not breathe dust. Do not get on skin, eyes or clothing.

Environmental Precautions

Stop spill/release if it can be done safely. Prevent spilled material and water from clean-up/firefighting from entering sewers, storm drains, other unauthorized drainage systems and natural waterways by using sand, earth, or other appropriate barriers.

Methods and Materials for Containment and Cleaning up

Avoid raising dust. Safely collect powdered material and deposit in sealed containers for disposal. Ventilate and wash area after clean-up is complete

SECTION 7) HANDLING AND STORAGE**General**

Wash hands after use. Do not breathe dust. Use good personal hygiene practices. Eating, drinking and smoking in work areas is prohibited. Remove contaminated clothing and protective equipment before entering eating areas. All containers must be properly labelled. Eyewash stations and showers should be available in areas where this material is used and stored Do not get in eyes, on skin, or on clothing.

Ventilation Requirements

Use only with adequate ventilation to control air contaminants to their exposure limits. The use of local ventilation is recommended to control emissions near the source. Report ventilation failures immediately.

Storage Room Requirements

Store in a cool, dry, well ventilated area, away from sources of ignition and incompatibilities. Keep containers securely sealed when not in use. Containers that have been opened must be carefully resealed to prevent leakage. Indoor storage should meet OSHA standards and appropriate fire codes. Empty containers retain residue and may be dangerous.

SECTION 8) EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye protection

Wear Dust-proof goggles with side shields

Skin Protection

Use of gloves approved to relevant standards made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Use of an apron and over-boots of chemically impervious materials such as neoprene or nitrile rubber. Launder soiled clothes or properly disposed of contaminated material, which cannot be decontaminated.

Respiratory protection

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker, a respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 should be followed. Check with respiratory protective equipment suppliers.

Appropriate Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Chemical Name	CAN_ONsmg	CAN_ONtmg	CAN_ONsppm	CAN_ONtppm	CAN_QCVEMP ppm - CANADA_QUE BEC VALEUR D'EXPOSITION MOYENNE PONDÉRÉE_p pm	CAN_QCVEMP mg - CANADA_QUE BEC VALEUR D'EXPOSITION MOYENNE PONDÉRÉE_m g	CAN_QCVECD ppm - CANADA_QUE BEC VALEUR D'EXPOSITION DE COURTE DURÉE_ppm	CAN_QCVECD mg - CANADA_QUE BEC VALEUR D'EXPOSITION DE COURTE DURÉE_mg
MANGANESE DIOXIDE						0.2		

Chemical Name	CAN_ALtppm	CAN_ALtmg	CAN_ALsmg	CAN_AL_Notation	CAN_AL_Carcinogen	CAN_ALsppm	CANsmg	CANsppm
MANGANESE DIOXIDE		0.2						

Chemical Name	CANtmg	CANtppm	OSHA STEL (mg/m3)	OSHA STEL (ppm)	OSHA TWA (mg/m3)	OSHA TWA (ppm)	OSHA Carcinogen	OSHA Tables (Z1, Z2, Z3)
MANGANESE DIOXIDE					5 ceiling			1

Chemical Name	OSHA Skin designation	ACGIH STEL (mg/m3)	ACGIH STEL (ppm)	ACGIH TWA (mg/m3)	ACGIH TWA (ppm)	ACGIH TLV Basis	ACGIH Carcinogen	ACGIH Notations
MANGANESE DIOXIDE				0.02 (R), 0.1 (I)		CNS impair		

(C) - Ceiling limit, (I) - Inhalable fraction, (R) - Respirable fraction, CNS - Central nervous system, impair - Impairment

SECTION 9) PHYSICAL AND CHEMICAL PROPERTIES

Bulk Density	5.03 g/cm3
Specific Gravity	5.03
Appearance	Crystalline solid
Odor Description	Odorless
Odor Threshold	N/A
pH	N/A
Melting Point	535.00 °C
Low Boiling Point	N/A
High Boiling Point	N/A
Flash Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Evaporation Rate	N/A
Upper Explosion Level	N/A
Lower Explosion Level	N/A
Water Solubility	Insoluble in water
Coefficient Water/Oil	N/A
Viscosity	N/A

SECTION 10) STABILITY AND REACTIVITY

Stability

Stable under normal storage and handling conditions.

Conditions To Avoid

Avoid heat, sparks, flame and contact with incompatible materials

Hazardous Reactions/Polymerization

Will not occur.

Incompatible Materials

Strong bases, acids, and oxidizing agents.

Hazardous Decomposition Products

Oxides of carbon.

SECTION 11) TOXICOLOGICAL INFORMATION

Acute Toxicity

Harmful if inhaled

Harmful if swallowed

The Acute Toxicity Estimate (ATE) for an oral exposure to this mixture is 500 mg/kg body weight

The Acute Toxicity Estimate (ATE) for a dermal exposure to this mixture is >5000 mg/kg body weight

The Acute Toxicity Estimate (ATE) for an inhalation (vapour) exposure to this mixture is >20 mg/l

Aspiration Hazard

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Germ Cell Mutagenicity

Based on available data, the classification criteria are not met.

Reproductive Toxicity

Suspected of damaging fertility or the unborn child

Respiratory/Skin Sensitization

Based on available data, the classification criteria are not met.

Serious Eye Damage/Irritation

Causes serious eye irritation

Skin Corrosion/Irritation

Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure

May cause damage to organs through prolonged or repeated exposure.

Specific Target Organ Toxicity - Single Exposure

Based on available data, the classification criteria are not met.

Likely Routes of Exposure

Inhalation, Ingestion, Skin contact, Eye contact

SECTION 12) ECOLOGICAL INFORMATION**Toxicity**

Based on available data, the classification criteria are not met.

Persistence and Degradability

No data available.

Bioaccumulative Potential

No data available.

Mobility in Soil

No data available.

Other Adverse Effects

No data available.

SECTION 13) DISPOSAL CONSIDERATIONS

Waste Disposal

It is the responsibility of the user of the product to determine at the time of disposal whether the product meets local criteria for hazardous waste. Waste management should be in full compliance with national, state and local laws. Empty Containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld or use for any other purposes.

SECTION 14) TRANSPORT INFORMATION

	Transport Canada Information	U.S. DOT Information	IMDG Information	IATA Information
UN number:	Not Regulated	Not Regulated	Not Regulated	Not Regulated
Proper shipping name:	N/A	N/A	N/A	N/A
Hazard class:	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Packaging group:	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Hazardous substance (RQ):	No Data Available	No Data Available		
Marine Pollutant:	No Data Available	No Data Available	No Data Available	
Note / Special Provision:	No Data Available	No Data Available	No Data Available	No Data Available
Toxic-Inhalation Hazard:	No Data Available	No Data Available		

SECTION 15) REGULATORY INFORMATION

CAS	Chemical Name	% By Weight	Regulation List
0001313-13-9	MANGANESE DIOXIDE	100%	DSL, TSCA, AICS, CN_IECSC - Inventory of Existing Chemical Substances Produced or Imported in China, EU_EINECS - European_EC_Inventory_EINECS, EU_EC_Inventory - European_EC_Inventory, PH_PICCS - Philippines, The Philippine Inventory of Chemicals and Chemical Substances, KR_KECI - Korean Existing Chemicals Inventory

SECTION 16) OTHER INFORMATION

Glossary

ACGIH - American Conference of Governmental Industrial Hygienists; CAS - Chemical Abstracts Service ; Chemtrec - Chemical Transportation Emergency Center; DSL - Domestic Substances List; ESL - Effects screening levels; GHS - "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations; HMIS - Hazardous Material Information Service; IATA - Dangerous Goods Regulations (DGR) for the air transport (IATA); IMDG - International Maritime Dangerous Goods Code; LC - Lethal Concentration; LD - Lethal Dose; NFPA - National Fire Protection Association; OEL - Occupational Exposure Limits; OSHA- Occupational Safety and Health Administration, US Department of Labor; PEL - Permissible Exposure Limit; SARA 313 - Superfund Amendments and Reauthorization Act, Section 313; SCBA - Self Contained Breathing Apparatus; ppm - parts per million; STEL - Short-term exposure limit; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act Public Law 94-469; TWA - Time-weighted average; US DOT- US Department of Transportation.

Version 1.0:
Revision Date: Jul 20, 2021
First Edition.

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