

Manganese Dioxide, Fine Granular Reagent

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Manganese Dioxide, Fine Granular Reagent

Synonyms/Generic Names: Manganese (IV) Dioxide; Manganese(IV) oxide; Manganese Superoxide; Manganese Peroxide; Black manganese oxide; Manganese Black; Pyrolusite Brown

Product Number: 3330

Product Use: Industrial, Manufacturing or Laboratory use

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Call: 920-623-2140 (Monday-Friday 8:00-4:30)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

Target Organs: Nerves, Lungs

Signal Word: Warning

Pictograms:



GHS Classification:

Acute toxicity, Oral	Category 4
Acute toxicity, Inhalation	Category 4
Specific target organ toxicity - Repeated exposure	Category 2

GHS Label Elements, including precautionary statements:

Hazard Statements:

H302	Harmful if swallowed.
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements:

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.

P264	Wash hands and skin thoroughly after handling.
P270	Do not eat, drink, or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P314	Get medical advice/attention if you feel unwell.
P301+P330+P312	IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P501	Dispose of contents/container in accordance with local regulations.

Potential Health Effects

Eyes	May cause eye irritation.
Inhalation	Harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Ingestion	Harmful if swallowed.

NFPA Ratings

Health	1
Flammability	0
Reactivity	0
Specific hazard	Not Available

HMIS Ratings

Health	1
Fire	0
Reactivity	0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Manganese Dioxide	>99	1313-13-9	215-202-6	MnO ₂	86.94 g/mol

4. FIRST-AID MEASURES

Eyes	Rinse with plenty of water for at least 15 minutes and seek medical attention if necessary.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if necessary.
Skin	Flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention if necessary.
Ingestion	Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention if necessary.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Product is not flammable. Use appropriate media for adjacent fire. Cool containers with water.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	Emits toxic fumes (manganese/manganese oxides) under fire conditions. (See also Stability and Reactivity section).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Pick up and arrange disposal without creating dust. Sweep up and place in suitable, closed containers for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of dusts.

Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area. Keep only in original container. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Manganese	5 mg/m ³	CEIL	OSHA
	1 mg/m ³	REL	NIOSH
	3 mg/m ³	STEL	NIOSH

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit usually 15 minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

Personal Protection

Eyes	Wear chemical safety glasses or goggles.
Inhalation	Use only outdoors or in well-ventilated area. Provide local exhaust, preferably mechanical. In case of inadequate ventilation or if exposure levels are excessive, use an approved respirator.
Skin	Wear nitrile or rubber gloves, apron or lab coat.
Other	Not Available

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Solid. Black powder.
Odor	Odorless.
Odor threshold	Not Available
pH	Not Available
Melting point/freezing point	Not Available
Initial boiling point and boiling range	Not Available
Flash point	Not Applicable
Evaporation rate	Not Available
Flammability (solid, gas)	Not Flammable
Upper/lower flammability or explosive limit	Not Explosive
Vapor pressure	Not Available
Vapor density	Not Available
Density	Not Available
Solubility (ies)	Water: 0.85 g/l
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable.
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Not Available.
Incompatible Materials	Acids. Metal. Oxidizing agents
Hazardous Decomposition Products	Manganese/manganese oxides.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Manganese Dioxide

Skin	Not Available
Eyes	Not Available
Respiratory	Not Available
Ingestion	LD50 Oral - rat - > 3,478 mg/kg

Carcinogenicity

IARC	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	A4: Not Classified as a Human Carcinogen.
NTP	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Irritation, redness, itchiness.
Eyes	Irritation, redness, watering eyes, itchiness.
Respiratory	Irritation, pneumonia, coughing, wheezing, languor, sleepiness and weakness in the legs.

Ingestion	Irritation, nausea, vomiting, diarrhea. Stolid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in Walking in advanced cases.
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Chronic Toxicity	May cause damage to the following organs: blood, the nervous system, liver, central nervous system and lungs.
Teratogenicity	Not Available
Mutagenicity	Not Classified
Embryotoxicity	Not Available
Specific Target Organ Toxicity	May cause damage to organs through prolonged or repeated exposure
Reproductive Toxicity	Not Classified
Respiratory/Skin Sensitization	Not Classified

12. ECOLOGICAL INFORMATION

Ecotoxicity

Manganese Dioxide

Aquatic Vertebrate	LC50 other aquatic organisms (freshwater) – 100% v/v
Aquatic Invertebrate	EC50 - Daphnia - >100% v/v
Terrestrial	1.3 mg/L

Persistence and Degradability	Not Available
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	This product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

13. DISPOSAL CONSIDERATIONS

Waste Product or Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residue.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	Not Dangerous Goods
TDG	Not Dangerous Goods
IMDG	Not Dangerous Goods
Marine Pollutant	No
IATA/ICAO	Not Dangerous Goods

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA Active inventory.
DSL / NDSL	All ingredients are listed on the DSL inventory.
California Proposition 65	Not Listed
Massachusetts: Toxic or Hazardous Substance List	Listed: Manganese compound
New Jersey: Right to Know Hazardous Substance List	Listed: Manganese compound
Pennsylvania: Hazardous Substance List	Listed: Manganese compound
Rhode Island: Hazardous Substance List	Listed: Manganese compound
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Chronic Health Hazard
SARA 312	Chronic Health Hazard
SARA 313	Listed: Manganese compounds
WHMIS Canada	Not Listed

16. OTHER INFORMATION

Revision	Date
Revision 1	07-30-2012
Revision 2	06-04-2015
Revision 3	12-03-2020

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