

GHS Safety Data Sheet

SDS No. : MNO01PAEG

Date Issued:2012/10/02
Last updated:2018/11/01

Section 1. Identification of the substance or mixture and of the supplier

1.1 Product Information

Product name: MnO₂ Manganese(IV)oxide

Product number:	Purity	Form	Size (μm)
MNO02PB	99%(2N)	powder by electrolysis	—
MNO03PB	99.99%(4N)	powder by decomposition of salt	—
MNO06PB	99.9%(3N)	powder	—

1.2 Company Information:

Manufacturer : Kojundo Chemical Laboratory Co., Ltd
 1-28, 5-chome, Chiyoda, Sakado-shi, Saitama Japan 350-0284
 Phone: +81-49-284-1511 Fax: +81-49-284-1351
 Emergency Phone : +81-49-284-1511

Section 2. Hazards identification

GHS Classification

Health Hazards	Environmental Hazards	Physical Hazards
Germ cell mutagenicity : Category 2 Specific target organ toxicity, single exposure : Category 1 Specific target organ toxicity, repeated exposure : Category 1	Hazardous to the aquatic environment, chronic toxicity :Category 4	Flammable solids : Not classified Pyrophoric solids : Not classified Self-heating substances and mixtures : Not classified Substances and mixtures which, in contact with water, emit flammable gases : Not classified

GHS Label: C



Pictograms or symbols

Warning word: **DANGER**

Hazard information

Suspected of causing genetic defects
Causes damage to organs (Respiratory system)
**Causes damage to organs (Nervous system,
Respiratory system) through prolonged or
repeated exposure**
**May cause long lasting harmful effects to
aquatic life**

Description of precaution

Obtain special instructions. Read and understand all safety precautions before handling.
 Wear protective gloves/protective clothing/eye protection/respiratory protection/face protection during handling.
 Avoid breathing dust/mist/gas/fume/vapors/spray. Do not eat, drink or smoke when using this product, and wash hands thoroughly after handling.
 Avoid release to the environment and collect spillage.
 Call a POISON CENTER or doctor/physician if you feel unwell.
 Store locked up.
 Dispose of contents/ container in accordance with local/national regulations.

Additional hazard information :

With respect to additional hazard information, see Section 11.

Section 3. Composition / information on ingredients

Chemical or common name:	Manganese(IV)oxide
Synonyms:	Manganese dioxide
Chemical formula:	MnO ₂
Single Substance or Compound:	Single substance
Composition:	100%
CAS #:	1313-13-9
RTECS#:	OP0350000
TSCA inventory:	listed
EINECS:	2152026

(See Section 8 for Exposure Limits)

Section 4. First aid measures

Eye contact:	Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.
Skin contact:	Promptly flush contaminated skin with soap or mild detergent and water. Contact physician if irritation continues.
Inhalation:	Remove the exposed person immediately and provide fresh air. Get medical attention.
Ingestion:	Rinse mouth and throat with water. Get medical attention immediately.

Section 5. Fire fighting measures

Extinguishing media:	Water fog or foam, Perlite ,dry sand. Do not use carbon dioxide or dry chemicals.
Fire fighting:	The product is not combustible but enhances combustion of other substances. In case of fire, the product may liberate toxic gases/ fume. Self-contained breathing apparatus and full protective clothing should be used, if the material is involved in fire. Remove containers to safe place if possible. Use water spray to Cool down nearby structures and containers.

Section 6. Accidental release measures

Personal Precautions:	Workers should use protective wears to prevent contact with the spilt adhesive and inhalation of its dust/ fume.
Environmental hazard precautions:	Shut off leak if without risk. Prevent flow out to river, etc. so as not to badly affect.
Method for containment and cleaning up:	Indoor leakage: Ventilate as much as possible until the cleaning is completed. Outdoor leakage: Work from the windward and evacuate the leeward crowd. Gather up, pack in closed DOT-approved waste container as much as possible. Carefully collect remnant and move to a safe place. Remove combustible materials and all sources of ignition.

Section 7. Handling and storage

Precautions to be taken in handling:

Safe handling: Use protective wears and local ventilation equipment, if inhalation or skin contact is foreseen.
Avoid prolonged or repeated exposure.

Precautions to be taken in storage:

General precautions: Store the material in a sealed container.
Store in a cool, dry, well ventilated and dark place away from incompatible materials.

Section 8. Exposure controls / personal protection

Exposure guideline:

Chemical Name	ACGIH(2013) TLV-TWA mg/m ³	OSHA(2006) PEL-TWA mg/m ³
Manganese compounds (as Mn)	0.02(R), 0.1(I)	5(C)

(R) : respirable particles, (I) : inhalable particles, (C) : Ceiling limit

Facility measures: Local ventilation of closed work room or total proper ventilation to prevent inhalation.

Protective ware: Wear appropriate NIOSH/MSHA-approved respirator, safety goggles, impervious gloves, protective wear, protective boots.

Section 9. Physical and chemical properties

Color and Form: Black powder, odorless.
Chemical formula: MnO₂
Formula weight: 86.9
Melting point: 535 °C (decompose)
Density: 5.08 g/cm³
Solubility: Water: Insoluble
Dissoluble: Hydrochloric acid
Insoluble: Nitric acid, acetone, cold sulfuric acid.
Flammable: Non-combustible substance
Oxidation: Oxidizing substance

Section 10. Stability and reactivity

Stability: Stable in closed container.
Reactivity
Incompatibility: Oxidizing agent, reducing agent, combustible material, Aluminum, sulfur, sulfides, phosphides, hypophosphite.
Condition to avoid: Heat

Section 11. Toxicological information

Acute toxicity(Oral, Dermal): GHS : Not classified.; Falls below the lowest level.
oral rat LD₅₀ > 2197 mg/kg
dermal rat LD₅₀ > 2000 mg/kg
Acute toxicity(inhalation): GHS : No data available
Skin corrosive / irritation: GHS : No data available
Serious eyes damage / eye irritation: GHS : No data available
Respiratory sensitization: GHS : No data available

Skin sensitization:	GHS : No data available
Germ cell mutagenicity:	GHS : Category 1 ; Suspected of causing genetic defects.
Carcinogenicity:	GHS : No data available
Reproductive toxicity:	GHS : No data available
Specific target organ toxicity —single exposure:	GHS ; Category 1 ; Causes damage to organs (Respiratory system).
Specific target organ toxicity —repeated exposure:	GHS ; Category 1 ; Causes damage to organs (Nervous system, Respiratory system) through prolonged or repeated exposure.
Aspiration hazard:	GHS : No data available

Section 12. Ecological information

Ecotoxicity:	
Hazards to the aquatic environment	
—acute toxicity:	GHS : No data available
—chronic toxicity:	GHS : Category 4 ; May cause long lasting harmful effects to aquatic life.
Hazardous to the ozone layer:	GHS : No data available No Freon or Halon
Fish toxicity:	No data available
Degradability:	No data available
Bioaccumulative potential:	No data available
Mobility in soil:	No data available

Section 13. Disposal considerations

Disposal method:	User of the product should contract with the local government or licensed 'Industrial Waste Haulers' for disposal of waste.
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Section 14. Transport information

UN classification:	Non-hazards
UN number:	None
HS code:	2820.10
Marine pollution:	None
Precautions:	Container should be transported in a secure position, in a well-ventilated vehicle.

Section 15. Regulatory information

TSCA inventory : listed.
Please refer to any other local / national measures that may be relevant.

Section 16. Other information

The information described above is believed to be correct. However, Kojundo Chemical Lab. makes no representation, warranty nor guarantee of any kind with respect to the information on this data sheet or any use of the product based upon this information.