

GHS Safety Data Sheet

SDS No. : MNO01PAEG

Date Issued : 2012/10/02

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

Product Information

Product name: MnO₂ Manganese(IV) oxide

Product number:	Purity	Form	Size or Shape (μm)
MNO02PB	99%(2N)	powder by electrolysis	—
MNO03PB	99.99%(4N)	powder by decomposition of salt	—
MNO07PB	99.99%(4N)	powder by decomposition of salt	—
MNO06PB	99.9%(3N)	powder	—

Company Information:

Manufacturer : Kojundo Chemical Laboratory Co., Ltd.

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Recommended uses and restrictions on use: For research purposes

Section 2. Hazards identification

GHS Classification

Health Hazards	Environmental Hazards	Physical Hazards
Acute toxicity, oral: Not classified Acute toxicity, dermal : Not classified Germ cell mutagenicity : Category 2 Specific target organ toxicity, single exposure: Category 1 repeated exposure: Category 1	Hazardous to the aquatic environment, acute hazard: Not classified long-term hazard: 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:



Pictograms or symbols:

Warning word: DANGER

Hazard information	Description of precaution
Suspected of causing genetic defects Causes damage to organs (respiratory organs) Causes damage to organs through prolonged or repeated exposure (nervous system, respiratory organs) May cause long lasting harmful effects to aquatic life	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.



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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

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.

Section5. Fire fighting measures

Extinguishing media:	Use media appropriate for surrounding fire. 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 fume or gases. 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 vapor/dusts.
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(2024) 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 particulate, I : Inhalable particulate , 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 etc.

Section 9. Physical and chemical properties

Appearance: Black solid, odorless.
 Chemical formula: MnO₂
 Formula weight: 86.9
 Melting point: 535 °C(decompose)
 Density: 5.08 g/cm³
 Solubility: Water: Insoluble
 Dissoluble: Hydrochloric acid
 Flammability: Non-combustible substance.
 Oxidation: Oxidizing substance

Section10. Stability and reactivity

Stability: Stable in closed container under room temperature.

Reactivity

Incompatibility: Oxidizing agent, reducing agent, combustible material, aluminum, hydrogen sulfide.

Section11. Toxicological information

Acute toxicity(Oral): GHS : Not classified
 Acute toxicity(dermal): GHS : Not classified
 Skin corrosive / irritation: GHS : No data available
 Serious eye damage / irritation: GHS : No data available
 Respiratory sensitization: GHS : No data available
 Skin sensitization: GHS : No data available
 Germ cell mutagenicity: GHS : Category 2 ; Suspected of causing genetic defects



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Carcinogenicity:

GHS : No data available

Carcinogenicity:

Chemical Name	ACGIH (2024)	IARC (2024)	NTP (2021)
Manganese compounds (as Mn)	A4	—	—

ACGIH A4 : Not classifiable as a Human Carcinogen

Reproductive toxicity:

GHS : No data available

Specific target organ toxicity

- single exposure: GHS : Category 1 ; Causes damage to organs(respiratory organs)
- repeated exposure: GHS : Category 1 ; Causes damage to organs through prolonged or repeated exposure (nervous system, respiratory organs)

Aspiration hazard:

GHS : No data available

Section12. Ecological information

Ecotoxicity:

Hazardous to the aquatic environment

- acute toxicity: GHS : Not classified
- 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

Section13. Disposal considerations

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

Section 14. Transport information

UN classification: Not hazardous

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

This SDS is for provision of information, and it does not represent a guarantee the properties or safeties of the product.

The information herein is based on the references we could obtained and the present state of our knowledge, however, this SDS does not always cover all information about the product. Some new information or amendments may be added afterwards.



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Prior to use, please investigate the laws and regulations of the organization, area and country where the product is to be used. The information is intended to ordinary usage, in case of special handling, sufficient care should be taken.



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