

SAFETY DATA SHEET

Version 6.5
Revision Date 07.11.2025
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Section 1: Identification

1.1 Product identifiers

Product name : Manganese(II) oxide

Product Number : 377201

Brand : BTLNEWMATERIAL

CAS-No. : 1344-43-0

1.2 Other means of identification

Manganese monoxide

1.3 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : For R&D use only. Not for pharmaceutical, household or other uses.

1.4 Details of the supplier of the safety data sheet

Company : btlnewmaterial
Room 706, No. 154, Wuyi East
Road Niezhou Residential
Committee, Caizichi Sub-district
Office, Leiyang City , Hengyang City
, Hunan Province , China

Telephone : +8618273793022

Fax : +8618273793022

E-mail address : lixifirm@outlook.com

1.5 Emergency telephone number

Emergency Phone # : +8618273793022

Section 2: Hazard identification

Classification of the substance or mixture

Not a hazardous substance or mixture.

GHS Label elements, including precautionary statements

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

Other hazards which do not result in classification

None known.

Section 3: Composition/information on ingredients

Substance / Mixture : Substance

CAS-No. : 1344-43-0

Components

Chemical name	CAS-No.	Concentration (% w/w)
Manganese oxide	1344-43-0	>= 90 -<= 100

Section 4: First-aid measures**Description of necessary first-aid measures**

If inhaled : After inhalation: fresh air.

In case of skin contact : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of eye contact : After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed : After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

Most important symptoms and effects, both acute and delayed

Risks : The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Protection of first-aiders : For personal protection see section 8.

Indication of any immediate medical attention and special treatment needed

Treatment : No data available

Section 5: Fire-fighting measures**Extinguishing media**

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Specific hazards during fire fighting : Not combustible.

Ambient fire may liberate hazardous vapours.

Hazardous combustion products : Manganese/manganese oxides

Special protective actions for fire-fighters

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

Specific extinguishing methods : Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions : Advice for non-emergency personnel:
Avoid inhalation of dusts.
Ensure adequate ventilation.
Evacuate the danger area, observe emergency procedures, consult an expert.
Advice for emergency responders:
For personal protection see section 8.

Environmental precautions

Environmental precautions : Do not let product enter drains.

Methods and materials for containment and cleaning up

Methods for cleaning up : Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

Section 7: Handling and storage

For precautions see section 2.2.

Precautions for safe handling

Hygiene measures : Change contaminated clothing. Wash hands after working with substance.

Conditions for safe storage, including any incompatibilities

Further information on storage conditions : Tightly closed.
Dry.

Storage class : 11, Combustible Solids

Recommended storage temperature : Recommended storage temperature see product label.

Section 8: Exposure controls/personal protection**Control parameters****Occupational Exposure Limits**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Manganese oxide	1344-43-0	PEL (long term)	1 mg/m ³ (Manganese)	SG OEL
		TWA (Inhalable particulate matter)	0.1 mg/m ³ (Manganese)	ACGIH
		TWA (Respirable particulate matter)	0.02 mg/m ³ (Manganese)	ACGIH

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Manganese oxide	1344-43-0	Manganese (Manganese)	Urine	Early morning	50 µg/l	SG BTLV

Appropriate engineering control measures : No data available

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Safety glasses

Respiratory protection : required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: : Filter type P2

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Hand protection

Material : Nitrile rubber
Break through time : 480 min
Glove thickness : 0.11 mm
Protective index : Full contact
Manufacturer : KCL 741 Dermatril® L

Material : Nitrile rubber
Break through time : 480 min
Glove thickness : 0.11 mm
Protective index : Splash contact
Manufacturer : KCL 741 Dermatril® L

Remarks : This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Section 9: Physical and chemical properties

Appearance : powder

Color : green

Odor : No data available

Odor Threshold : No data available

pH	: No data available
Melting point/ range	: 450 °C
Boiling point/boiling range	: No data available
Flash point	: Not applicable
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Flammability (liquids)	: No data available
Burning rate	: No data available
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapor pressure	: No data available
Relative vapour density	: No data available
Relative density	: 5.28 (21 °C)
Density	: 5.45 g/cm ³ (25 °C) Method: lit.
Water solubility	: No data available
Partition coefficient: n- octanol/water	: No data available
Autoignition temperature	: No data available
Decomposition tempera- ture	: No data available
Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Flow time	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Molecular weight	: 70.94 g/mol

Particle characteristics
Particle size : No data available

Section 10: Stability and reactivity

Reactivity : No data available

Chemical stability : The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions : No data available

Conditions to avoid : no information available

Incompatible materials : Strong oxidizing agents

Hazardous decomposition products : In the event of fire: see section 5

Section 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - female - > 2,000 mg/kg
(Fixed Dose Method)

LC50 Inhalation - Rat - male and female - 4 h - > 5.35 mg/l

(OECD Test Guideline 403)

Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation

(OECD Test Guideline 405)

Respiratory or skin sensitization

- Mouse

Result: Does not cause skin sensitisation.

Germ cell mutagenicity

Test Type: Mouse

Test system: lymphocyte

Metabolic activation: with and without metabolic activation

Result: negative

Test Type: In vivo micronucleus test
Species: Mouse

Method: Mutagenicity (micronucleus test)
Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

RTECS: OP0900000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., Men exposed to manganese dusts showed a decrease in fertility. Chronic manganese poisoning primarily involves the central nervous system. Early symptoms include languor, sleepiness and weakness in the legs. A stolid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases. High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds.

Section 12: Ecological information

Toxicity

Components:

Manganese oxide:

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): > 1.2 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 4 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	: EC50 (Desmodesmus subspicatus (green algae)): > 1.3 mg/l

Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (Sludge Treatment): > 1,000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

Persistence and degradability

Components:

Manganese oxide:

Biodegradability : Remarks: No data available

Bioaccumulative potential

Components:

Manganese oxide:

Bioaccumulation : Remarks: No data available

Mobility in soil

Components:

Manganese oxide:

Stability in soil : Remarks: No data available

Other adverse effects

Components:

Manganese oxide:

Additional ecological information : No data available

Section 13: Disposal considerations

Disposal methods

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Section 14: Transport information

International Regulations

IATA-DGR

Not regulated as a dangerous good

UN/ID No. : Not applicable
UN proper shipping name : Not applicable
Transport hazard : Not applicable
class(es)
Subsidiary risk : Not applicable
Packing group : Not applicable
Labels : Not applicable
Packing instruction (cargo : Not applicable
aircraft)
Packing instruction (pas- : Not applicable
senger aircraft)

IMDG-Code

Not regulated as a dangerous good

UN number : Not applicable
UN proper shipping name : Not applicable
Transport hazard : Not applicable
class(es)
Subsidiary risk : Not applicable
Packing group : Not applicable
Labels : Not applicable
EmS Code : Not applicable
Marine pollutant : Not applicable

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

Special precautions for user

Remarks : Not classified as dangerous in the meaning of
transport regulations.

Section 15: Regulatory information**Safety, health and environmental regulations specific for the product in question**

Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subject to the requirements in the Act/Regulations.

Environmental Protection and Management Act : Not applicable
and Environmental Protection and Management
(Hazardous Substances) Regulations

Fire Safety (Petroleum and Flammable Materials) Regulations : Not applicable

Section 16: Other information

Revision Date : 07.11.2025

Further information

Other information : The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.
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Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
SG BTLV : Singapore. Biological Threshold Limit Values
SG OEL : Singapore. Workplace Safety and Health Act - First Schedule Permissible Exposure Limits of Toxic Substances

ACGIH / TWA : 8-hour, time-weighted average
SG OEL / PEL (long term) : Permissible Exposure Level (PEL) Long Term

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MERCOSUR - The Agreement for the Facilitation of the Transport

of Dangerous Goods; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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