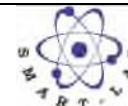


**MATERIAL SAFETY DATA SHEET****MANGANESE DIOXIDE**

Revision : 00

Date : 17.10.2019

MSDS Number : 0831

## Section 1 - Chemical Product and Company Identification

- 1.1 Product Name** : **MANGANESE DIOXIDE**  
**Synonyms** : Manganese (IV) Oxide  
**CAS No.** : 1313-13-9  
**HS Code** : 2820 10 00  
**Molecular Weight** : 86.94 g/mol  
**Chemical Formula** : MnO<sub>2</sub>  
**Product Code** : A 2916, A 2917, A 2918  
**Brand** : SMART-LAB
- 1.2 Manufacturer** : **PT.Smart-Lab Indonesia**  
**Address** : Ruko Boulevard Taman Tekno Blok E No.10-11,BSD Sektor XI Serpong,  
Tangerang - Indonesia  
**Website** : [www.smartlabid.com](http://www.smartlabid.com)  
**Email** : sales@smartlabid.com  
**For information** : Telp: +62-21- 7588 0205(Hunting) , fax:+62-21-7588 0198
- 1.3 Application** : General Chemical reagent  
**Emergency Telephone:** +62-21-7588 0205(Hunting)

## Section 2 - Hazards Identification

- 2.1 Classification of the substance or mixture**  
**Classification according to Regulation (EC) No 1272/2008**  
 Acute toxicity, Oral (Category 4), H302  
 Acute toxicity, Inhalation (Category 4), H332

For the full text of the H-Statements mentioned in this Section, see Section 16

**2.2 Label elements**

Labelling according Regulation (EC) No 1272/2008

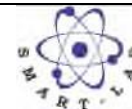
Pictogram



Signal word	warning
Hazard statement(s) H302 + H332	Harmful if swallowed or if inhaled
Precautionary statement(s)	none
Supplemental Hazard Statements	none

**2.3 Other hazards**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**MATERIAL SAFETY DATA SHEET****MANGANESE DIOXIDE**

Revision : 00

Date : 17.10.2019

MSDS Number : 0831

## Section 3 - Composition, Information on Ingredients

**3.1 Substances**

Synonyms : Manganese (IV) Oxide  
 Formula : MnO<sub>2</sub>  
 Molecular weight : 86.94 g/mol  
 CAS-No. : 1313-13-9  
 EC-No. : 215-202-6  
 Index-No. : 025-001-00-3

**Hazardous ingredients according to Regulation (EC) No 1272/2008**

Component	Classification	Concentration
Manganese dioxide CAS-No. 1313-13-9 EC-No. 215-202-6 Index-No. 025-001-00-3	Acute Tox. 4; H302, H332	<=100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

## Section 4 - First Aid Measures

**4.1 Description of first aid measures****General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**4.2 Most important symptoms and effects, both acute and delayed**

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

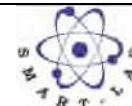
**4.3 Indication of any immediate medical attention and special treatment needed**

No data available

## Section 5 - Firefighting Measures

**5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide

**MATERIAL SAFETY DATA SHEET****MANGANESE DIOXIDE**

Revision : 00

Date : 17.10.2019

MSDS Number : 0831

**5.2 Special hazards arising from the substance or mixture**

Manganese/manganese oxides

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**

No data available

## Section 6 - Accidental Release Measures

**6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust. For personal protection see section 8

**6.2 Environmental precautions**

Do not let product enter drains.

**6.3 Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

## Section 7 - Handling and Storage

**7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Storage class (TRGS 510): Non Combustible Solids

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

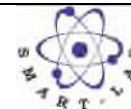
## Section 8 - Exposure Controls, Personal Protection

**8.1 Control parameters****8.2 Exposure control****Appropriat engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment****Eye/face protection**

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**MATERIAL SAFETY DATA SHEET****MANGANESE DIOXIDE**

Revision : 00

Date : 17.10.2019

MSDS Number : 0831

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

## Full contact

Material: Nitrile rubber  
Minimum layer thickness: 0.11 mm  
Break through time: 480 min  
Material tested: Dermatril

## Splash contact

Material: Nitrile rubber  
Minimum layer thickness: 0.11 mm  
Break through time: 480 min  
Material tested: Dermatril®

**Body Protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle r (US) or type ABEKP2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

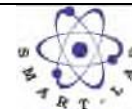
**Control of environmental exposure**

Do not let product enter drains.

## Section 9 - Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

Appearance	Form: powder
Odour	No data available
Odour Threshold	No data available
pH	No data available
Melting point/freezingpoint	Melting point/range: 535 °C
Initial boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Vapour density	No data available
Relative density	5.026 g/cm <sup>3</sup>
Water solubility	No data available
Partition coefficient: noctanol/water	No data available

**MATERIAL SAFETY DATA SHEET****MANGANESE DIOXIDE**

Revision : 00

Date : 17.10.2019

MSDS Number : 0831

Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

**9.2 Other safety information**

No data available

## Section 10 - Stability and Reactivity

**10.1 Reactivity**

No data available

**10.2 Chemical stability**

Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions**

No data available

**10.4 Conditions to avoid**

No data available

**10.5 Incompatible materials**

Strong acids, Strong reducing agents, Organic materials

**10.6 Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Manganese/manganese oxides

Other decomposition products - No data available

In the event of fire: see section 5

## Section 11 - Toxicological Information

**11.1 Information on toxicological effects****Acute toxicity**

No data available

**Skin corrosion/irritation**

No data available

**Serious eye damage/eye irritation**

No data available

**Respiratory or skin sensitisation**

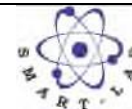
No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**MATERIAL SAFETY DATA SHEET****MANGANESE DIOXIDE**

Revision : 00

Date : 17.10.2019

MSDS Number : 0831

**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

**Additional Information**

RTECS: OP0350000

Men exposed to manganese dusts showed a decrease in fertility. Chronic man system. Early symptoms include languor, sleepiness and weakness in the le disturbances such as uncontrollable laughter and a spastic gait with tend cases. High incidence of pneumonia has been found in workers exposed to t(Manganese dioxide) To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.(Manganese dioxide) Liver - Irregularities - Based on Human Evidence(Manganese dioxide)

## Section 12 - Ecological Information

**12.1 Toxicity**

No data available

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.6 Other adverse effects**

No data available

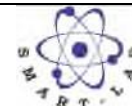
## Section 13 - Disposal Considerations

**13.1 Waste treatment methods****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chem scrubber.

**Contaminated packaging**

Dispose of as unused product.

**MATERIAL SAFETY DATA SHEET****MANGANESE DIOXIDE**

Revision : 00

Date : 17.10.2019

MSDS Number : 0831

## Section 14 - Transport Information

**14.1 UN number**

ADR/RID: -

IMDG: -

IATA: -

**14.2 UN proper shipping name**

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

**14.3 Transport hazard class(es)**

ADR/RID: -

IMDG: -

IATA: -

**14.4 Packaging group**

ADR/RID: -

IMDG: -

IATA: -

**14.5 Environmental hazards**

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

**14.6 Special precautions for user****Further information**

No data available

## Section 15 - Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

**15.2 Chemical safety assessment**

For this product a chemical safety assessment was not carried out

## Section 16 - Additional Information

**Full text of H-Statements referred to under sections 2 and 3.**

H302 Harmful if swallowed.

H302 + H332 Harmful if swallowed or if inhaled

H332 Harmful if inhaled.

**National Fire Protection Association (U.S.A.):**

Health: 2

Flammability: 0

Reactivity: 0

**Revision history :**

Date	Rev	Description
Oct 17, 2019	00	-

**Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. PT. Smartlab Indonesia Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.