

## Material Safety Data Sheets (MSDS)

### Manganese Dioxide

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#### Identification of Product

Chemical Code: CHE-M7

Chemical Name: Manganese Dioxide

Chemical Grade: AR

Chemical Formula:  $MnO_2$

Chemical Weight: 86,94 g/mol

CAS No: 1313-13-9

Chemical Synonyms: Manganese(IV) Oxide

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#### Hazards Identification

REACH No: No Data Available

Signal Word: Warning

Supplemental Hazard Information:

Additional Hazard Information: This substance contains no components considered to be either persistent, bio-accumulative and toxic (PBT), or very persistent and very bio-accumulative (vPvB) at levels of 0.1% or higher.



#### Hazards statements

H302 + H332 - Harmful if swallowed or if inhaled.

H373 - May cause damage to organs (Brain) through prolonged or repeated exposure if inhaled.

### Precautionary statements

P260 - Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

P264 - Wash skin thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

P314 - Get medical advice/ attention if you feel unwell.

P501 - Dispose of contents/ container to an approved waste disposal plant.

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### Composition of Chemical

Chemical Formula:  $\text{MnO}_2$

EC No 1272/2008: No Data Available

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### First Aid Measures

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

If: Inhaled: Move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

If: Skin Contact: Wash off with soap and plenty of water. Consult a physician.

If: Eye Contact: Flush eyes with water as a precaution.

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

Important Symptoms: The most important known symptoms and effects are described in the labeling section.

Immediate Medical Attention: No Data Available

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### Firefighting Measures

Extinguishing Media: Use Water spray, Alcohol-resistant foam, Dry chemical or Carbon Dioxide.

Hazards Arising: Manganese/Manganese Oxides

Advice for Firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Info for Firefighting: No Data Available

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### Accidental Release Measures

Personal Precautions: Use personal protective equipment.

Avoid dust formation.

Avoid breathing vapours, mist or gas.

Ensure adequate ventilation.

Avoid breathing dust.

Environmental Precautions: Do not let product enter drains.

Method for Containment: Pick up and arrange disposal without creating dust.

Sweep up and shovel.

Keep in suitable, closed containers for disposal.

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## Handling and Storage

Personal Precautions: Avoid contact with skin and eyes.

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

Environmental Precautions: Store in cool place.

Keep container tightly closed in a dry and well-ventilated place.

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## Exposure Controls | Personal Protection

Derived No Effect Level (DNEL)

Workers | Application Area | Exposure Routes | Health Effect | Value

No Data Available

Consumers | Application Area | Exposure Routes | Health Effect | Value

No Data Available

Predicted No Effect Concentration (PNEC)

No Data Available

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

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).

Skin Protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves 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®

Data source: KCL GmbH, D-36124. Test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

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 respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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## Physical and Chemical Properties

Appearance: Grey to Black, crystals, powder or granules

Odour: Odourless

Odour Threshold: No Data Available

pH: No Data Available

Melting Point: Melting point/range: 535 °C

Boiling Point: No Data Available

Flash Point: No Data Available

Evaporation: No Data Available

Flammability: No Data Available

Upper/Lower Flammability or Explosive Limits: No Data Available

Vapour pressure: No Data Available

Vapour density: No Data Available

Relative density: No Data Available

Water solubility: 0,001 g/l at 20 °C

Partition Coefficient: No Data Available

Auto-ignition Temperature: No Data Available

Decomposition Temperature: ca. 535 °C

Viscosity: No Data Available

Explosive properties: No Data Available

Oxidizing properties: No Data Available

Other Safety Info: No Data Available

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## Stability and Reactivity

Reactivity: No Data Available

Chemical Stability: Stable under recommended storage conditions.

Possibility of hazardous reactions: No Data Available

Conditions to Avoid: No Data Available

Incompatible Materials: Strong acids, Strong reducing agents, Organic materials

Hazardous Decomposition Products: Hazardous decomposition products formed under fire conditions - Manganese / Manganese Oxides.

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## Toxicological Information

Acute Toxicity: No Data Available

Skin Corrosion/Irritation: Rabbit -

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

Serious Eye damage | Eye Irritation: Rabbit -

Result: No eye irritation - 72 h

(OECD Test Guideline 405)

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.

Reproductive toxicity: No Data Available

Specific Target Organ Toxicity - Single Exposure: No Data Available

Specific Target Organ Toxicity - Repeated Exposure: Inhalation - May cause damage to organs through prolonged or repeated exposure - Brain.

Aspiration Hazard: No Data Available

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## Ecological Information

Ecological Toxicity: No Data Available

Ecological Persistence and degradability: No Data Available

Bioaccumulative Potential: No Data Available

Mobility in Soil: No Data Available

Results of PBT and vPvB Assessment: This substance contains no components considered to be either persistent, bio-accumulative and toxic (PBT), or very persistent and very bio-accumulative (vPvB) at levels of 0.1% or higher.

Other Adverse Effect: No Data Available

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## Disposal Considerations

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 chemical incinerator equipped with an afterburner and scrubber. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste.

Contaminated packaging - Dispose of as unused product.

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## Transport Information

UN Number: ADR/RID: -

IMDG: -

IATA: -

UN Shipping Hazard: ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

Transport Hazard Class: ADR/RID: -

IMDG: -

IATA: -

Packaging Group: ADR/RID: -

IMDG: -

IATA: -

Environmental Hazards: ADR/RID: no

IMDG Marine pollutant: no

IATA: no

Special Precautions: No data available

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## Regulatory Information

Safety, Health and environmental regulations: This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Chemical Safety Assessment: For this product a chemical safety assessment was not carried out

Additional Info: 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.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence

RTECS: OP0350000

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#### Disclaimer

The information stated above is considered to be correct, but does not claim to be inclusive and shall only be used as a guideline. The information provided by this document is confirmed by our continuous updating of knowledge and adheres to the products appropriate safety precautions. It does not represent any guarantee of the product's properties. RLS Chemicals and its Associates shall not be held accountable for any damage's consequent of handling the above product.

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