1. Identification

Product Name: Manganese(II) chloride

Cat No.: AC223610000; AC223610100; AC223610500; AC223612500

CAS-No: 7773-01-5

Synonyms: Manganese dichloride

Recommended Use: Laboratory chemicals.

Uses advised against: Not for food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information US call: 001-800-ACROS-01 / Europe call: +32 14 57 52 11
Emergency Number US:001-201-796-7100 / Europe: +32 14 57 52 99
CHEMTREC Tel. No.US:001-800-424-9300 / Europe:001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td>Category 4</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Specific target organ toxicity - (repeated exposure)</td>
<td>Category 2</td>
</tr>
<tr>
<td>Target Organs - Kidney, Liver, Heart, spleen, Blood.</td>
<td></td>
</tr>
</tbody>
</table>

Label Elements

Signal Word
Danger

Hazard Statements
Harmful if swallowed
Causes serious eye damage
May cause damage to organs through prolonged or repeated exposure
Precautionary Statements

Prevention
Wear eye/face protection
Do not get in eyes, on skin, or on clothing
Do not eat, drink or smoke when using this product
Wash hands and face thoroughly after handling

Response
Get medical attention/advice if you feel unwell

Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician

Ingestion
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Storage
Store locked up

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Toxic to aquatic life with long lasting effects

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese(II) chloride</td>
<td>7773-01-5</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>

4. First-aid measures

General Advice
If symptoms persist, call a physician.

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

Inhalation
Move to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Obtain medical attention. If not breathing, give artificial respiration.

Ingestion
Do not induce vomiting. Call a physician or Poison Control Center immediately.

Most important symptoms and effects
Causes eye burns. Causes severe eye damage.

Notes to Physician
Treat symptomatically

5. Fire-fighting measures
Manganese(II) chloride

Suitable Extinguishing Media
Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

Unsuitable Extinguishing Media
No information available

Flash Point
Method - No information available

Autoignition Temperature
Explosion Limits
Upper No data available
Lower No data available

Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Non-combustible. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
Hydrogen chloride gas Chlorine

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>1</td>
<td>N/A</td>
</tr>
</tbody>
</table>

6. Accidental release measures

Personal Precautions
Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing.

Environmental Precautions
Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up
Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

7. Handling and storage

Handling
Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Do not breathe vapors/dust. Do not ingest.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere.

8. Exposure controls / personal protection

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
<th>Mexico OEL (TWA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese(II) chloride</td>
<td>TWA: 0.02 mg/m³</td>
<td>(Vacated) Ceiling: 5 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA: 0.1 mg/m³</td>
<td>Ceiling: 5 mg/m³</td>
<td>IDLH: 500 mg/m³</td>
<td>TWA: 0.2 mg/m³</td>
</tr>
</tbody>
</table>

Legend
ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures
Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations
and safety showers are close to the workstation location.

**Personal Protective Equipment**

**Eye/face Protection**
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection**
Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection**
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

### 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Light red</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>5.5 25 g/l aq.sol.(20°C)</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>650 °C / 1202 °F</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>1190 °C / 2174 °F</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid,gas)</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability or explosive limits</td>
<td></td>
</tr>
<tr>
<td>Upper</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>Partition coefficient; n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td></td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>( \text{Cl}_2 \text{Mn} )</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>125.84</td>
</tr>
</tbody>
</table>

### 10. Stability and reactivity

**Reactive Hazard**
None known, based on information available

**Stability**
Hygroscopic.

**Conditions to Avoid**
Avoid dust formation. Incompatible products. Excess heat. Exposure to moist air or water.

**Incompatible Materials**
Reducing agents, Oxidizing agents, Strong acids, Peroxides, Organic materials, Bases

**Hazardous Decomposition Products**
Hydrogen chloride gas, Chlorine

**Hazardous Polymerization**
Hazardous polymerization does not occur.

**Hazardous Reactions**
None under normal processing.

### 11. Toxicological information

**Acute Toxicity**

---

Page 4 / 7
### Product Information

#### Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese(II) chloride</td>
<td>250 mg/kg (Rat)</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td></td>
<td>1031 mg/kg (Mouse)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Toxicologically Synergistic Products

- Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Irritation

- Severe eye irritant

#### Sensitization

- No information available

#### Carcinogenicity

- The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese(II) chloride</td>
<td>7773-01-5</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

#### Mutagenic Effects

- Mutagenic effects have occurred in experimental animals.

#### Reproductive Effects

- No information available.

#### Developmental Effects

- No information available.

#### Teratogenicity

- No information available.

#### STOT - single exposure

- None known

#### STOT - repeated exposure

- Kidney Liver Heart spleen Blood

#### Aspiration hazard

- No information available

#### Symptoms / effects, both acute and delayed

- No information available

#### Endocrine Disruptor Information

- No information available

#### Other Adverse Effects

- Tumorigenic effects have been reported in experimental animals.

### 12. Ecological information

#### Ecotoxicity

- The product contains following substances which are hazardous for the environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese(II) chloride</td>
<td>Not listed</td>
<td>&gt;1000 mg/L 48h</td>
<td>Not listed</td>
<td>4.7 mg/L 48h</td>
</tr>
</tbody>
</table>

#### Persistence and Degradability

- Persistence is unlikely

#### Bioaccumulation / Accumulation

- No information available.

#### Mobility

- Will likely be mobile in the environment due to its water solubility.

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese(II) chloride</td>
<td>0.85</td>
</tr>
</tbody>
</table>

### 13. Disposal considerations

#### Waste Disposal Methods

- Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.
14. Transport information

**DOT**
- UN-No: UN3077
- Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
- Proper technical name: Manganese(II) chloride
- Hazard Class: 9
- Packing Group: III

**TDG**
- UN-No: UN3077
- Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
- Hazard Class: 9
- Packing Group: III

**IATA**
- UN-No: UN3077
- Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s
- Hazard Class: 9
- Packing Group: III

**IMDG/IMO**
- UN-No: UN3077
- Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s
- Hazard Class: 9
- Packing Group: III

15. Regulatory information

**International Inventories**

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECS</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese(II) chloride</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>231-869-6</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

**Legend:**
- X - Listed
- E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
- F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
- N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
- P - Indicates a commenced PMN substance
- R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
- S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
- T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
- XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).
- Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
- Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

**TSCA 12(b)**
- Not applicable

**SARA 313**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese(II) chloride</td>
<td>7773-01-5</td>
<td>&gt;95</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**SARA 311/312 Hazard Categories**
- See section 2 for more information

**CWA (Clean Water Act)**
- Not applicable

**Clean Air Act**

<table>
<thead>
<tr>
<th>Component</th>
<th>HAPS Data</th>
<th>Class 1 Ozone Depleters</th>
<th>Class 2 Ozone Depleters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese(II) chloride</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
OSHA Occupational Safety and Health Administration  
Not applicable

CERCLA Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese(II) chloride</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

16. Other information

Prepared By Regulatory Affairs  
Thermo Fisher Scientific  
Email: EMSDS.RA@thermofisher.com

Creation Date 04-Nov-2009  
Revision Date 19-Jan-2018  
Print Date 19-Jan-2018  
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.