



# SAFETY DATA SHEET

Creation Date 04-Nov-2009

Revision Date 08-Oct-2013

Revision Number 4

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

Product Description:	Manganese(II) chloride
Cat No. :	271410000; 271410010; 271410025; 271410250; 271412500
Synonyms	Manganese dichloride
CAS-No	7773-01-5
EC-No.	231-869-6
Molecular Formula	Cl <sub>2</sub> Mn

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use	Laboratory chemicals
Sector of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
Product category	PC21 - Laboratory chemicals
Process categories	PROC15 - Use as a laboratory reagent
Environmental release category	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Uses advised against	No Information available

### 1.3. Details of the supplier of the safety data sheet

Company	Acros Organics BVBA Janssen Pharmaceuticaaan 3a 2440 Geel, Belgium
E-mail address	begel.sdsdesk@thermofisher.com

### 1.4. 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

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

#### CLP Classification - Regulation (EC) No 1272/2008

##### Physical hazards

Based on available data, the classification criteria are not met

##### Health hazards

Acute oral toxicity	Category 4
Serious Eye Damage/Eye Irritation	Category 1
Specific target organ toxicity - (repeated exposure)	Category 2

##### Environmental hazards

Chronic aquatic toxicity	Category 2
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#### Classification according to EU Directives 67/548/EEC or 1999/45/EC

Symbol(s)	Xn - Harmful N - Dangerous for the environment
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**SECTION 2: HAZARDS IDENTIFICATION****R-phrases(s)**

R22 - Harmful if swallowed  
 R41 - Risk of serious damage to eyes  
 R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation  
 R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

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

**2.2. Label elements****Signal Word****Danger****Hazard Statements**

H318 - Causes serious eye damage  
 H411 - Toxic to aquatic life with long lasting effects  
 H302 - Harmful if swallowed  
 H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

**Precautionary Statements**

P270 - Do not eat, drink or smoke when using this product  
 P264 - Wash face, hands and any exposed skin thoroughly after handling  
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 P310 - Immediately call a POISON CENTER or doctor/ physician  
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
 P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

**2.3. Other hazards**

No information available.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS****3.1. Substances**

Component	CAS-No	EC-No.	Weight %	CLP Classification - Regulation (EC) No 1272/2008	DSD Classification - 67/548/EEC
Manganese(II) chloride	7773-01-5	EEC No. 231-869-6	>95	Acute Tox. 4 (H302) Eye Dam. 1 (H318) STOT RE 2 (H373) Aquatic Chronic 2 (H411)	Xn; R22 Xi; R41 Xn; R48/20 N; R51/53

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

**SECTION 4: FIRST AID MEASURES****4.1. Description of first aid measures****General Advice**

If symptoms persist, call a physician.

<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.
<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.
<b>Protection of First-aiders</b>	Use personal protective equipment.

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

Causes eye burns.

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

**Notes to Physician** Treat symptomatically.

**SECTION 5: FIREFIGHTING MEASURES****5.1. Extinguishing media****Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

**Extinguishing media which must not be used for safety reasons**

No information available.

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

Thermal decomposition can lead to release of irritating gases and vapors.

**Hazardous Combustion Products**

Hydrogen chloride gas, Chlorine.

**5.3. Advice for firefighters**

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

**SECTION 6: ACCIDENTAL RELEASE MEASURES****6.1. Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation.

**6.2. Environmental precautions**

Do not flush into surface water or sanitary sewer system.

**6.3. Methods and material for containment and cleaning up**

Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep in suitable, closed containers for disposal.

**6.4. Reference to other sections**

Refer to protective measures listed in Sections 8 and 13.

**SECTION 7: HANDLING AND STORAGE****7.1. Precautions for safe handling**

Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

### 7.2. Conditions for safe storage, including any incompatibilities

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

### 7.3. Specific end use(s)

Use in laboratories

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

#### Exposure limits

List source(s):

**UK** - EH40/2005 Containing the workplace exposure limits (WELs) for use with the Control of Substances Hazardous to Health Regulations (COSHH) 2002 (as amended). Updated by September 2006 official press release and October 2007 Supplement.

Component	European Union	The United Kingdom	France	Belgium	Spain
Manganese(II) chloride		STEL: 1.5 mg/m <sup>3</sup> 15 min TWA: 0.5 mg/m <sup>3</sup> 8 hr			TWA / VLA-ED: 0.2 mg/m <sup>3</sup> (8 horas)

Component	Italy	Germany	Portugal	The Netherlands	Finland
Manganese(II) chloride		TWA: 0.5 mg/m <sup>3</sup> (8 Stunden). AGW - TWA: 0.2 mg/m <sup>3</sup> (8 Stunden). MAK TWA: 0.02 mg/m <sup>3</sup> (8 Stunden). MAK Höhepunkt: 1.6 mg/m <sup>3</sup> Höhepunkt: 0.16 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> 8 horas		TWA: 0.2 mg/m <sup>3</sup> 8 tunteina

Component	Austria	Denmark	Switzerland	Poland	Norway
Manganese(II) chloride	STEL: 2 mg/m <sup>3</sup> 15 Minuten TWA: 0.5 mg/m <sup>3</sup> 8 Stunden		MAK: 0.5 mg/m <sup>3</sup> 8 Stunden		TWA: 1 mg/m <sup>3</sup> 8 timer TWA: 0.1 mg/m <sup>3</sup> 8 timer

#### Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

#### Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

**Derived No Effect Level (DNEL)** No information available.

Route of exposure	Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Oral				
Dermal				
Inhalation				

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Manganese(II) chloride

**Predicted No Effect Concentration (PNEC)** No information available.

## 8.2. Exposure controls

### Engineering Measures

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

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

### Personal protective equipment

#### Eye Protection

Goggles (European standard - EN 166)

#### Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Natural rubber	See manufacturers	-	EN 374	(minimum requirement)
Nitrile rubber	recommendations			
Neoprene				
PVC				

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Remove gloves with care avoiding skin contamination.

#### Skin and body protection

Long sleeved clothing

#### Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly.

#### Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced..

**Recommended Filter type:** Particulates filter conforming to EN 143.

#### Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Recommended half mask:-** Particle filtering: EN149:2001

When RPE is used a face piece Fit Test should be conducted.

### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

### Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

Appearance	Light red	
Physical State	Solid.	
Odor	odorless	
Odor Threshold	No data available	
pH	5.5	25 g/l aq.sol.(20°C)

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## Manganese(II) chloride

Melting Point/Range	650°C / 1202°F	
Softening Point	No data available	
Boiling Point/Range	1190°C / 2174°F	
Flash Point	No information available.	Method - No information available.
Evaporation Rate	Not applicable	Solid
Flammability (solid,gas)	No information available.	
Explosion Limits	No data available.	
Vapor Pressure	No data available	
Vapor Density	Not applicable	Solid
Specific Gravity / Density	No data available	
Bulk Density	No data available	
Water Solubility	723 g/L (25°C)	
Solubility in other solvents	No information available.	
Partition Coefficient (n-octanol/water)	Component Manganese(II) chloride	log Pow 0.85
Autoignition Temperature	Not applicable	
Decomposition temperature	No data available	
Viscosity	Not applicable	Solid
Explosive Properties	No information available.	
Oxidizing Properties	No information available.	

### 9.2. Other information

Molecular Formula	Cl <sub>2</sub> Mn
Molecular Weight	125.84

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

None known, based on information available.

### 10.2. Chemical stability

Stable under normal conditions. Hygroscopic.

### 10.3. Possibility of hazardous reactions

Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

### 10.4. Conditions to avoid

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

### 10.5. Incompatible materials

Reducing agents. Oxidizing agents. Strong acids. Peroxides. Organic materials. Bases.

### 10.6. Hazardous decomposition products

Hydrogen chloride gas, Chlorine.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects

#### Product Information

## (a) acute toxicity;

Oral

Category 4

Dermal

Based on available data, the classification criteria are not met

Inhalation

Based on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Manganese(II) chloride	250 mg/kg ( Rat ) 1031 mg/kg ( Mouse )		

## (b) skin corrosion/irritation;

Based on available data, the classification criteria are not met

## (c) serious eye damage/irritation;

Category 1

## (d) respiratory or skin sensitization;

Respiratory

Based on available data, the classification criteria are not met

Skin

Based on available data, the classification criteria are not met

## (e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

Mutagenic effects have occurred in experimental animals.

## (f) carcinogenicity;

Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

## (g) reproductive toxicity;

Reproductive Effects

Based on available data, the classification criteria are not met

Developmental Effects

Experiments have shown reproductive toxicity effects on laboratory animals.

Teratogenicity

Developmental effects have occurred in experimental animals.  
Teratogenic effects have occurred in experimental animals..

## (h) STOT-single exposure;

Based on available data, the classification criteria are not met

## (i) STOT-repeated exposure;

Category 2

Target Organs

Liver, Kidney, Heart, spleen, Central nervous system (CNS), Blood, Respiratory system.

## (j) aspiration hazard;

Not applicable

Solid

## Other Adverse Effects

Tumorigenic effects have been reported in experimental animals. See actual entry in RTECS for complete information

Symptoms / effects,  
both acute and delayed

No information available.

## SECTION 12: ECOLOGICAL INFORMATION

## 12.1. Toxicity

## Ecotoxicity effects

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

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Manganese(II) chloride	>1000 mg/L 48h	4.7 mg/L 48h		

## 12.2. Persistence and degradability

Persistence

Soluble in water, Persistence is unlikely, based on information available.

Degradability

Not relevant for inorganic substances.

Degradation in sewage  
treatment plant

Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

**12.3. Bioaccumulative potential**

Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Manganese(II) chloride	0.85	No data available

**12.4. Mobility in soil**

The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

**12.5. Results of PBT and vPvB assessment**

No data available for assessment

**12.6. Other adverse effects****Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

**Persistent Organic Pollutant**

This product does not contain any known or suspected substance

**Ozone Depletion Potential**

This product does not contain any known or suspected substance

**SECTION 13: DISPOSAL CONSIDERATIONS****13.1. Waste treatment methods****Waste from Residues / Unused Products**

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

**Contaminated Packaging**

Dispose of this container to hazardous or special waste collection point..

**European Waste Catalogue (EWC)**

According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.

**Other Information**

Do not dispose of waste into sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not let this chemical enter the environment.

**SECTION 14: TRANSPORT INFORMATION****IMDG/IMO****14.1. UN number**

UN3077

**14.2. UN proper shipping name**

Environmentally hazardous substance, solid, n.o.s

**14.3. Transport hazard class(es)**

9

**14.4. Packing group**

III

**ADR****14.1. UN number**

UN3077

**14.2. UN proper shipping name**

Environmentally hazardous substance, solid, n.o.s

**14.3. Transport hazard class(es)**

9

**14.4. Packing group**

III

**IATA****14.1. UN number**

UN3077

**14.2. UN proper shipping name**

Environmentally hazardous substance, solid, n.o.s

**14.3. Transport hazard class(es)**

9

**14.4. Packing group**

III

**14.5. Environmental hazards**

Dangerous for the environment  
Product is a marine pollutant according to the criteria set by IMDG/IMO

**14.6. Special precautions for user**

No special precautions required

**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable, packaged goods



## SECTION 15: REGULATORY INFORMATION

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

## International Inventories X = listed

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	CHINA	AICS	KECL
Manganese(II) chloride	231-869-6	-		X	X	-	X	X	X	X	X

## National Regulations

Component	Germany - Water Classification (VwVwS)	Germany - TA-Luft Class
Manganese(II) chloride	WGK 1	

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

Take note of Dir 94/33/EC on the protection of young people at work

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

## 15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

## SECTION 16: OTHER INFORMATION

## Full text of R-phrases referred to under sections 2 and 3

R22 - Harmful if swallowed

R41 - Risk of serious damage to eyes

R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation

R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

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

H302 - Harmful if swallowed

H318 - Causes serious eye damage

H411 - Toxic to aquatic life with long lasting effects

H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

## Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Existing and Evaluated Chemical Substances

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Industrial Hygiene

**DNEL** - Derived No Effect Level

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**NOEC** - No Observed Effect Concentration

**PBT** - Persistent, Bioaccumulative, Toxic

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**IMO/MDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japan Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**PNEC** - Predicted No Effect Concentration

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - Volatile Organic Compounds

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**Key literature references and sources for data**

Suppliers safety data sheet,  
Chemadvisor - LOLI,  
Merck index,  
RTECS

**Training Advice**

Chemical incident response training.

**Creation Date** 04-Nov-2009

**Revision Date** 08-Oct-2013

**Revision Summary**

**Reason for revision** (M)SDS sections updated, 2, 3.

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

**Disclaimer**

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

**End of Safety Data Sheet**