Safety data sheet
according to 1907/2006/EC, Article 31

revised on: 13.05.2022 Version number 4 Creation Date: 16.04.2018

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Trade name: Manganese(II) chloride tetrahydrate**

· **Article number:** 1410
· **CAS Number:**
13446-34-9
· **EC number:**
231-869-6
· **Registration number**
A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 UK REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
· **Application of the substance / the mixture**
Industrial use
Reagent for analysis
Laboratory chemicals

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Th. Geyer GmbH & Co. KG
Dornierstr. 4 – 6
D-71272 Renningen

Tel.: +49(0)7159-1637-0, Fax:+49 (0)7159/18417
www.thgeyer.de
sicherheitsdatenblaetter@thgeyer.de

· **Further information obtainable from:** Product management department

· **1.4 Emergency telephone number:**
National Poisons Information Service
City Hospital
Dudley Road
Birmingham B18 7QH
Tel.:Emergency: (00 44) 87 06 00 62 66
National Poisons Information Service
+44 121 507 4123
Members of the public seeking specific information on poisons should contact:
In England and Wales: NHS 111 - dial 111
In Scotland: NHS 24 - dial 111

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SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**



GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

(Contd. on page 2)

Safety data sheet
according to 1907/2006/EC, Article 31

revised on: 13.05.2022 Version number 4 Creation Date: 16.04.2018

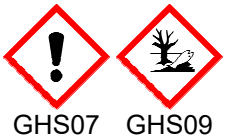
Trade name: Manganese(II) chloride tetrahydrate

(Contd. of page 1)


GHS07

Acute Tox. 4 H302 Harmful if swallowed.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the GB CLP regulation.
· **Hazard pictograms**


GHS07 GHS09

· **Signal word** Warning
· **Hazard statements**
H302 Harmful if swallowed.
H411 Toxic to aquatic life with long lasting effects.
· **Precautionary statements**
P273 Avoid release to the environment.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

*
SECTION 3: Composition/information on ingredients

· **3.1 Substances**
· **CAS No. Description**
CAS: 13446-34-9 Manganese(II) chloride tetrahydrate
· **Identification number(s)**
· **EC number:** 231-869-6

SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **General information:**
First aider needs to protect himself.
Immediately remove any clothing soiled by the product.
· **After inhalation:**
Remove person from danger area.
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:**
Flush contaminated skijn with soap and plenty of water.
take care of a Possiblility of inhalation at the same time
After prolonged contact or any signs of skin changes (redness or other signs of inflammation) seek medical attention.
· **After eye contact:**
Protect unharmed eye.
Rinse out opened eye for several minutes under running water.
Seek immediate medical advice.

(Contd. on page 3)

Safety data sheet
according to 1907/2006/EC, Article 31

revised on: 13.05.2022 Version number 4 Creation Date: 16.04.2018

Trade name: Manganese(II) chloride tetrahydrate

(Contd. of page 2)

· **After swallowing:**
Rinse mouth thoroughly with water.
Administer medicinal carbon.
A person vomiting while laying on their back should be turned onto their side.
Do not induce vomiting; call for medical help immediately.
· **Information for doctor:** Please observe safety data sheet/label.
· **4.2 Most important symptoms and effects, both acute and delayed**
Gastric or intestinal disorders
Cramp
Nausea
· **Hazards**
Danger of pneumonia.
Danger of pulmonary oedema.
· **4.3 Indication of any immediate medical attention and special treatment needed**
Give Glucocorticoid-Aerosol in case of lung irritation.
Monitor circulation.
Later observation for pneumonia and pulmonary oedema.
Symptomatic treatment.

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SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
· **For safety reasons unsuitable extinguishing agents:** Water with full jet.
· **5.2 Special hazards arising from the substance or mixture**
Not combustible.
Formation of toxic gases is possible during heating or in case of fire.
In case of fire, the following can be released:
hydrogen chloride gas
Manganese oxides
Under certain fire conditions, traces of other toxic gases cannot be excluded.
Ambient fire may liberate hazardous vapours.
· **5.3 Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.
· **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Prevent fire extinguishing water from contaminating surface water or the ground water system.

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SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation.
Do not inhale dust.
Avoid contact with eyes and skin.
Avoid formation of dust.
· **6.2 Environmental precautions:** Do not allow to enter sewers/surface or ground water.
· **6.3 Methods and material for containment and cleaning up:**
Cover drains.
Collect, dike, and pump out.
Take up dry.
Clean-up.
Dispose of the material collected according to regulations.
· **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

(Contd. on page 4)

Safety data sheet
according to 1907/2006/EC, Article 31

revised on: 13.05.2022 Version number 4 Creation Date: 16.04.2018

Trade name: Manganese(II) chloride tetrahydrate

(Contd. of page 3)

See Section 13 for disposal information.

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SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Store in cool, dry place in tightly closed receptacles.
Keep away from heat and direct sunlight.
Apply the general protection and hygiene measures for the handling with chemicals.
· **Information about fire - and explosion protection:**
Substance itself does not burn, tuning measures to environment

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
· **Information about storage in one common storage facility:**
Store away from oxidising agents.
Store away from water.
· **Further information about storage conditions:**
Keep container tightly sealed.
Store in dry conditions.
Protect from humidity and water.
No metal containers
· **Storage class:** 13
· **7.3 Specific end use(s)** No further relevant information available.

*
SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**
· **Additional information about design of technical facilities:** No further data; see item 7.
· **Ingredients with limit values that require monitoring at the workplace:** Not required.
· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
· **Respiratory protection:** Not required.
· **Protection of hands:**


Protective gloves

Labsolute®protective
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
NBR: acrylonitrile-butadiene rubber
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
· **Penetration time of glove material**
level 6 for application > 480 min
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**


Safety glasses

(Contd. on page 5)

Safety data sheet
according to 1907/2006/EC, Article 31

revised on: 13.05.2022 Version number 4 Creation Date: 16.04.2018

Trade name: Manganese(II) chloride tetrahydrate

(Contd. of page 4)

Use safety goggles with side protection.

· **Body protection:**



Protective work clothing (e. g. safety shoes EN ISO 20345, long-sleeved protective working garments).

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SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Solid material
Colour:	Pink
· **Odour:**	Odourless
· **Change in condition**	
Melting point/freezing point:	58 °C (Kristallwasserabspaltung)
Initial boiling point and boiling range:	1190 °C (Wasserfrei)
· **Flash point:**	Not applicable.
· **Flammability (solid, gas):**	Product is not flammable.
· **Decomposition temperature:**	1190 °C (Zersetzung))
· **Auto-ignition temperature:**	Not determined.
· **Explosive properties:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapour pressure:**	Not applicable.
· **Density at 20 °C:**	2.01 g/cm³
	Not determined.
· **Relative density**	Not determined.
· **Vapour density**	Not applicable.
· **Evaporation rate**	Not applicable.
· **Solubility in / Miscibility with water at 20 °C:**	1980 g/l
· **Partition coefficient: n-octanol/water:**	Not determined.
· **Viscosity:**	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· **9.2 Other information**	No further relevant information available.

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SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.
· **10.2 Chemical stability** Stable with proper storage and handling.
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **10.3 Possibility of hazardous reactions** Reacts with earth alkaline metals.
· **10.4 Conditions to avoid** Protect from humidity.

(Contd. on page 6)

Safety data sheet
according to 1907/2006/EC, Article 31

revised on: 13.05.2022 Version number 4 Creation Date: 16.04.2018

Trade name: Manganese(II) chloride tetrahydrate

(Contd. of page 5)

· **10.5 Incompatible materials:**
Metals
Light metals
Avoid contact with other chemicals.
· **10.6 Hazardous decomposition products:** On fire: see chapter 5

SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity**
Harmful if swallowed.

· **LD/LC50 values relevant for classification:**		
Oral	LD50	1,480 mg/kg (rat)

· **Primary irritant effect:**
· **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
· **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
· **Subacute to chronic toxicity:** -
· **Additional toxicological information:**
· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.
· **STOT-single exposure** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

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SECTION 12: Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** No further relevant information available.
· **Ecotoxical effects:**
· **Remark:**
Toxic for fish
Toxic for water fleas
Toxic for algae
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

*
SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
Observe local (country-specific) regulations and laws
This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 7)

Safety data sheet
according to 1907/2006/EC, Article 31

revised on: 13.05.2022 Version number 4 Creation Date: 16.04.2018

Trade name: Manganese(II) chloride tetrahydrate

(Contd. of page 6)

· **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
Chemicals must be disposed of in compliance with the respective national regulations.

· **European waste catalogue**	
06 00 00	WASTES FROM INORGANIC CHEMICAL PROCESSES
06 13 00	wastes from inorganic chemical processes not otherwise specified
06 13 99	wastes not otherwise specified
HP6	Acute Toxicity
HP14	Ecotoxic

· **Uncleaned packaging:**
· **Recommendation:** Disposal must be made according to official regulations.

*
SECTION 14: Transport information

· **14.1 UN-Number**
· **ADR, IMDG, IATA** UN3077

· **14.2 UN proper shipping name**
· **ADR** 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Manganese(II) chloride tetrahydrate)
· **IMDG, IATA** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Manganese(II) chloride tetrahydrate)

· **14.3 Transport hazard class(es)**

· **ADR**



· **Class** 9 (M7) Miscellaneous dangerous substances and articles.
· **Label** 9

· **IMDG, IATA**



· **Class** 9 Miscellaneous dangerous substances and articles.
· **Label** 9

· **14.4 Packing group**
· **ADR, IMDG, IATA** III

· **14.5 Environmental hazards:**
· **Marine pollutant:** Symbol (fish and tree)
· **Special marking (ADR):** Symbol (fish and tree)
· **Special marking (IATA):** Symbol (fish and tree)

· **14.6 Special precautions for user** Warning: Miscellaneous dangerous substances and articles.
· **Hazard identification number (Kemler code):** 90
· **EMS Number:** F-A,S-F
· **Stowage Category** A
· **Stowage Code** SW23 When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.

(Contd. on page 8)

Safety data sheet
according to 1907/2006/EC, Article 31

revised on: 13.05.2022 Version number 4 Creation Date: 16.04.2018

Trade name: Manganese(II) chloride tetrahydrate

(Contd. of page 7)

· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Limited quantities (LQ)**	5 kg
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· **Transport category**	3
· **Tunnel restriction code**	(-)
· **IMDG**	
· **Limited quantities (LQ)**	5 kg
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· **UN "Model Regulation":**	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (MANGANESE(II) CHLORIDE TETRAHYDRATE), 9, III

SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Inventory of Hazardous Chemicals** Substance is not listed.

· **Directive 2012/18/EU**
· **Named dangerous substances - ANNEX I** Substance is not listed.
· **Seveso category** E2 Hazardous to the Aquatic Environment
· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 200 t
· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 t
· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**
Substance is not listed.
· **REGULATION (EU) 2019/1148**
· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**
Substance is not listed.
· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS** Substance is not listed.
· **Regulation (EC) No 273/2004 on drug precursors** Substance is not listed.
· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**
Substance is not listed.

· **National regulations:**

· **Information about limitation of use:**
Employment restrictions concerning juveniles must be observed.
Employment restrictions concerning pregnant and lactating women must be observed.
· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Application, use and handling of our products take place out of our control and are solely your responsibility.

(Contd. on page 9)

Safety data sheet
according to 1907/2006/EC, Article 31

revised on: 13.05.2022 Version number 4 Creation Date: 16.04.2018

Trade name: Manganese(II) chloride tetrahydrate

(Contd. of page 8)

· **Department issuing SDS:** Product management
· **Contact:** Product management
· **Abbreviations and acronyms:**
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 4: Acute toxicity – Category 4
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
· *** Data compared to the previous version altered.**