

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

Printing date 13.11.2023

Version number 37 (replaces version 36)

Revision: 13.11.2023

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

· **1.1 Product identifier**

· **Product name:** Manganese LR 1

· **Catalog number:** 00516081, 4516080BT, 4516081BT, 516080BT, 516081BT, 00516089BT

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**

· **Application of the substance / the preparation:** Reagent for water analysis

· **1.3 Details of the supplier of the safety data sheet**

· **Supplier:**

Tintometer GmbH  
Schleefstraße 8-12  
44287 Dortmund  
Made in Germany  
www.lovibond.com

phone: +49 (0)231 94510-0  
e-mail: sales@lovibond.com

The Tintometer Limited  
Lovibond® House  
Sun Rise Way  
Amesbury  
Wiltshire SP4 7GR  
United Kingdom

phone : +44 1980 664800  
e-mail: SDS@lovibond.uk

· **Informing department:**

e-mail: sds@lovibond.com  
Product Safety Department

· **1.4 Emergency telephone number:**

+44 1235 239670  
Languages: English

#### SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Eye Irrit. 2 H319 Causes serious eye irritation.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the GB CLP regulation.

· **Hazard pictograms**



GHS07

· **Signal word** Warning

· **Hazard-determining components of labelling:**

ammonium chloride  
Formaldoxime Trimer Hydrochloride

· **Hazard statements**

H302 Harmful if swallowed.

H319 Causes serious eye irritation.

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**Precautionary statements**

- P280 Wear protective gloves / eye protection.  
 P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P330 Rinse mouth.  
 P337+P313 If eye irritation persists: Get medical advice/attention.

· **2.3 Other hazards** No further relevant information available.

**Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

**Determination of endocrine-disrupting properties**

The product does not contain substances with endocrine disrupting properties.

### SECTION 3: Composition/information on ingredients

**3.2 Mixtures**

· **Description:** Mixture of organic and inorganic compounds

**Dangerous components:**

CAS: 12125-02-9 EINECS: 235-186-4 Index No: 017-014-00-8 Reg.nr.: 01-2119487950-27-XXXX	ammonium chloride ⚠ Acute Tox. 4, H302; Eye Irrit. 2, H319	10–20%
CAS: 6286-29-9	Formaldoxime Trimer Hydrochloride ⚠ Acute Tox. 2, H300; Acute Tox. 3, H311; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	2.5–5%

· **Additional information** For the wording of the listed hazard phrases refer to section 16.

### SECTION 4: First aid measures

**4.1 Description of first aid measures**

- **General information** Instantly remove any clothing soiled by the product.
- **After inhalation** Supply fresh air and call for doctor for safety reasons.
- **After skin contact** Instantly wash with water and soap and rinse thoroughly.
- **After eye contact**  
Rinse opened eye for several minutes under running water (at least 15 min). If symptoms persist, consult doctor.
- **After swallowing**  
Rinse out mouth and then drink 1-2 glasses of water.  
Seek medical treatment in case of complaints.

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

- irritations
- after inhalation:
  - mucous membrane irritation
  - coughing
  - breathing difficulty
- after swallowing:
  - absorption
  - sickness
  - vomiting
  - diarrhoea
- after swallowing of large amounts:
  - drop in blood pressure
  - respiratory paralysis
  - CNS disorders
  - cramps

· **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

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### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
- **5.2 Special hazards arising from the substance or mixture**
  - The product is not combustible.
  - Formation of toxic gases is possible during heating or in case of fire.
  - Can be released in case of fire:
  - Hydrogen chloride (HCl)
  - Nitrogen oxides (NO<sub>x</sub>)
  - Ammonia (NH<sub>3</sub>)
- **5.3 Advice for firefighters**
- **Protective equipment:**
  - Wear self-contained breathing apparatus.
  - Wear full protective suit.
- **Additional information**
  - Collect contaminated fire fighting water separately. It must not enter drains.
  - Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
  - Ambient fire may liberate hazardous vapours.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
- **Advice for non-emergency personnel:**
  - Wear protective equipment. Keep unprotected persons away.
  - Ensure adequate ventilation
- **Advice for emergency responders:** Protective equipment: see section 8
- **6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.
- **6.3 Methods and material for containment and cleaning up:**
  - Ensure adequate ventilation.
  - Collect mechanically.
  - Dispose of contaminated material as waste according to item 13.
- **6.4 Reference to other sections**
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for information on disposal.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
- **Advice on safe handling:**
  - Open and handle container with care.
  - Prevent formation of dust.
- **Hygiene measures:**
  - Avoid contact with the eyes.
  - Take off immediately all contaminated clothing.
  - Wash hands during breaks and at the end of the work.
  - Do not eat, drink or smoke when using this product.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and containers:**
  - Store in cool location.
  - Unsuitable material for container: aluminium.
  - Cu, Pb, Fe
- **Information about storage in one common storage facility:** Do not store together with alkalis (caustic solutions).
- **Further information about storage conditions:**
  - Store in cool, dry conditions in well sealed containers.
  - Protect from heat and direct sunlight.
  - Protect from the effects of light.
  - Store under dry conditions.
  - Protect from humidity and keep away from water.
  - This product is hygroscopic.
- **Recommended storage temperature:** 20°C +/- 5°C

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- **7.3 Specific end use(s)** No further relevant information available.

### SECTION 8: Exposure controls/personal protection

#### · 8.1 Control parameters

- **Components with limit values that require monitoring at the workplace:**

##### **CAS: 12125-02-9 ammonium chloride**

WEL (Great Britain)	Short-term value: 20 mg/m <sup>3</sup> Long-term value: 10 mg/m <sup>3</sup>
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- **Regulatory information** WEL (Great Britain): EH40/2020

#### · DNELs

Derived No Effect Level (DNEL)

##### **CAS: 12125-02-9 ammonium chloride**

Oral	DNEL	55.2 mg/kg (Consumer / long-term / systemic effects)
Dermal	DNEL	128.9 mg/kg (Worker / long-term / systemic effects)
		55.2 mg/kg (Consumer / long-term / systemic effects)
Inhalative	DNEL	43.97 mg/m <sup>3</sup> (Worker / long-term / systemic effects)
		9.4 mg/m <sup>3</sup> (Consumer / long-term / systemic effects)

- **Recommended monitoring procedures:**

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

#### · PNECs

Predicted No Effect Concentration (PNEC)

##### **CAS: 12125-02-9 ammonium chloride**

PNEC	13.1 mg/l (Sewage treatment plant)
	0.025 mg/l (Marine water)
	0.43 mg/l (Aquatic intermittent release)
	0.25 mg/l (Fresh water)
PNEC	50.7 mg/kg (Soil)
	0.09 mg/kg (Marine sediment)
	0.9 mg/kg (Fresh water sediment)

- **Additional information:** The lists that were valid during the compilation were used as basis.

#### · 8.2 Exposure controls

- **Engineering measures:**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.

- **Individual protection measures, such as personal protective equipment**

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.

- **Eye/face protection** Safety glasses

- **Hand protection**

Protective gloves.

Preventive skin protection by use of skin-protecting agents is recommended.

After use of gloves apply skin-cleaning agents and skin cosmetics.

- **Material of gloves**

nitrile rubber, NBR

Recommended thickness of the material:  $\geq 0.11$  mm

- **Penetration time of glove material**

Value for the permeation: Level = 1 ( &lt; 10 min )

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Other skin protection (body protection):** Protective work clothing.

- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.

- **Recommended filter device for short term use:** Filter P2

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· **Environmental exposure controls** Do not allow product to reach sewage system or water bodies.

### SECTION 9: Physical and chemical properties

· <b>9.1 Information on basic physical and chemical properties</b>	
· <b>Physical state</b>	Solid.
· <b>Form:</b>	Tablets
· <b>Colour:</b>	Whitish
· <b>Odour:</b>	Odourless
· <b>Odour threshold:</b>	Not applicable.
· <b>Melting point/Freezing point:</b>	Not determined.
· <b>Boiling point or initial boiling point and boiling range</b>	Not determined.
· <b>Flammability</b>	The product is not combustible.
· <b>Explosive properties:</b>	Product is not explosive.
· <b>Lower and upper explosion limit</b>	
<b>Lower:</b>	Not applicable.
<b>Upper:</b>	Not applicable.
· <b>Flash point:</b>	Not applicable.
· <b>Auto-ignition temperature:</b>	Not applicable (solid).
· <b>Decomposition temperature:</b>	Not determined.
· <b>pH (11 g/l) at 20°C</b>	5.9
· <b>Kinematic viscosity</b>	Not applicable (solid).
· <b>Solubility</b>	
· <b>Water:</b>	Soluble
· <b>Partition coefficient n-octanol/water (log value)</b>	Not applicable (mixture).
· <b>Vapour pressure:</b>	Not applicable.
· <b>Density and/or relative density</b>	
· <b>Density:</b>	Not determined.
· <b>Relative density:</b>	Not determined.
· <b>Relative gas density</b>	Not applicable (solid).
· <b>Particle characteristics</b>	Not determined.

#### · 9.2 Other information

· <b>Information with regard to physical hazard classes</b>	
· <b>Corrosive to metals</b>	Void
· <b>Other safety characteristics</b>	
· <b>Oxidising properties:</b>	none
· <b>Additional information</b>	
· <b>Solids content:</b>	100.0 %

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** see section 10.3
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**  
 Reacts with acids, alkalis and oxidizing agents  
 --> forms heat  
 Reacts with halogenated compounds  
 Violent reactions possible with:  
 chlorine
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:**  
 aluminium  
 copper  
 Iron
- **10.6 Hazardous decomposition products:**  
 Hydrogen chloride (HCl)  
 In case of fire: see section 5.

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### SECTION 11: Toxicological information

#### · 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

##### · Acute toxicity

Classification according to calculation procedure:  
Harmful if swallowed.

##### · Acute toxicity estimate (ATE<sub>(MX)</sub>) - Calculation method:

Oral	CLP ATE <sub>(MX)</sub>	798 mg/kg (.)
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##### · LD/LC50 values that are relevant for classification:

###### CAS: 12125-02-9 ammonium chloride

Oral	LD50	1410 mg/kg (rat) (OECD 1410) (Merck)
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###### CAS: 6286-29-9 Formaldoxime Trimer Hydrochloride

Oral	LD50	30 mg/kg (rat)
Dermal	LD50	300 mg/kg (ATE)

· **Skin corrosion/irritation** Based on available data, the classification criteria are not met.

· **Serious eye damage/irritation** Causes serious eye irritation.

##### · Information on components:

###### CAS: 12125-02-9 ammonium chloride

Irritation of eyes	OECD 405	(rabbit: irritation)
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· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

##### · Information on components:

###### CAS: 12125-02-9 ammonium chloride

Sensitisation	OECD 406	(guinea pig: negative) (EPA OPP 81-6: Guinea pig maximisation test)
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· **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.

##### · Information on components:

OECD 414: Teratogenicity testing

OECD 473: Mutagenicity testing

OECD 471, 474, 476, 487: Germ cell mutagenicity testing

###### CAS: 12125-02-9 ammonium chloride

OECD 471	(negative)	(Escherichia coli / Salmonella typhimurium)
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· **STOT (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.

· **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.

· **Aspiration hazard** Based on available data, the classification criteria are not met.

##### · Information on likely routes of exposure

In occupational use, exposure to ammonium chloride is to be expected, particularly in the case of inhalative exposure to mist or smoke, possibly also dust.

Due to the physico-chemical properties, a low level of dermal absorption is assumed.

In the case of oral intake, ammonium chloride is effectively absorbed via the gastrointestinal tract. [GESTIS]

##### · Additional toxicological information:

###### CAS: 12125-02-9 ammonium chloride

(source: GESTIS)

Main toxic effects:

acute: pronounced irritation of the eyes, mucous membranes and respiratory tract, slightly irritating to the skin; after high oral doses: acidosis

chronic: irritation of the eyes, mucous membranes and respiratory tract, slightly irritating to the skin;

after high oral doses: systemic effects with metabolic acidosis and impairment of general well-being

#### · 11.2 Information on other hazards

· **Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.

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**Other information**

According to the information available to us, the chemical, physical and toxicological properties of the substances mentioned in Chapter 3 have not been thoroughly investigated.

### SECTION 12: Ecological information

**12.1 Toxicity**
**Aquatic toxicity:**
**CAS: 12125-02-9 ammonium chloride**

EC50 &gt;100 mg/l/48h (Daphnia magna)

 LC50 42.91 mg/l/96h (rainbow trout)  
(Merck)

**Other information:**

Toxic for fish:

 $\text{NH}_4^+$  > 0.3 mg/l

**12.2 Persistence and degradability** No further relevant information available.

**Other information:** The following statements refer to the individual components.

**12.3 Bioaccumulative potential**

Pow = n-octanol/wasser partition coefficient

log Pow &lt; 1 = Does not accumulate in organisms.

**CAS: 12125-02-9 ammonium chloride**

log Pow -4.37 (.)

**12.4 Mobility in soil** No further relevant information available.

**12.5 Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

**12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.

**12.7 Other adverse effects**

Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of water supplies. Avoid transfer into the environment.

**Water hazard:**

Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into soil.

### SECTION 13: Disposal considerations

**13.1 Waste treatment methods**
**Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Hand over to disposers of hazardous waste.

**European waste catalogue**

16 05 06\* laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals

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

**Recommended cleaning agent:** Water, if necessary with cleaning agent.

### SECTION 14: Transport information

**14.1 UN number or ID number**

ADR, IMDG, IATA Void

**14.2 UN proper shipping name**

ADR, IMDG, IATA Void

**14.3 Transport hazard class(es)**

ADR, IMDG, IATA

Class Void

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· <b>14.4 Packing group</b> · <b>ADR, IMDG, IATA</b>	Void
· <b>14.5 Environmental hazards:</b> · <b>Marine pollutant:</b>	No
· <b>14.6 Special precautions for user</b>	Not applicable.
· <b>14.7 Maritime transport in bulk according to IMO instruments</b>	Not applicable.
· <b>Transport/Additional information:</b>	Not dangerous according to the above specifications.

### SECTION 15: Regulatory information

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

· **Poisons Act UK**

· **Regulated explosives precursors**

None of the ingredients is listed.

· **Regulated poisons**

None of the ingredients is listed.

· **Reportable explosives precursors**

None of the ingredients is listed.

· **Reportable poisons**

None of the ingredients is listed.

· **Regulation (EU) 2019/1148 on the marketing and use of explosives precursors** not regulated

· **Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC)**

None of the ingredients is listed.

· **Regulation (EC) No 1334/2000 setting up a Community regime for the control of exports of dual-use items and technology:**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

· **Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:**

None of the ingredients is listed.

· **Labelling according to Regulation (EC) No 1272/2008**

· **Hazard-determining components of labelling:** ammonium chloride

· **REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)**

None of the ingredients is listed.

· **LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)**

None of the ingredients is listed.

· **Substances of very high concern (SVHC) according to REACH, Article 57**

This product does not contain any substances of very high concern above the legal concentration limit of  $\geq 0.1\%$  (w / w).

· **Substances of very high concern (SVHC) according to UK REACH**

This product does not contain any substances of very high concern above the legal concentration limit of  $\geq 0.1\%$  (w / w).

· **Directive 2012/18/EU (SEVESO III):**

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 65

· **Information about limitation of use:** Not required.

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 · **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.
 

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### SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

 · **Training hints** Provide adequate information, instruction and training for operators.

 · **Relevant phrases**

H300 Fatal if swallowed.

H302 Harmful if swallowed.

H311 Toxic in contact with skin.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

 · **Abbreviations and acronyms:**

ICAO: International Civil Aviation Organisation

EC50: effective concentration, 50 percent (in vivo)

OECD: Organisation for Economic Co-operation and Development

STOT: specific target organ toxicity

SE: single exposure

RE: repeated exposure

EC50: half maximal effective concentration

IC50: half maximal inhibitory concentration

NOEL or NOEC: No Observed Effect Level or Concentration

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

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

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (UK REACH)

PNEC: Predicted No-Effect Concentration (UK REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 2: Acute toxicity – Category 2

Acute Tox. 4: Acute toxicity – Category 4

Acute Tox. 3: Acute toxicity – Category 3

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

 · **Sources**

Data arise from safety data sheets, reference works and literature.

IUCLID (International Uniform Chemical Information Database)

GESTIS- Stoffdatenbank (Substance Database, Germany)

ECHA: European Chemicals Agency <http://echa.europa.eu>
 · \* **Data compared to the previous version altered.**


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