

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

Printing date 10.10.2022

Version number 26 (replaces version 25)

Revision: 10.10.2022

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

· **1.1 Product identifier**

· **Product name: Nitrate HR 1**

· **Catalog number:** 00518001, 518000BT, 518001, 00518009

· **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.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

· **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

· **Hazard statements**

H302 Harmful if swallowed.

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 10.10.2022

Version number 26 (replaces version 25)

Revision: 10.10.2022

Product name: Nitrate HR 1

(Contd. of page 1)

H319 Causes serious eye irritation.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P280 Wear protective gloves / eye protection.

P273 Avoid release to the environment.

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.

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 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	90–100%
CAS: 7440-66-6 EINECS: 231-175-3 Index No: 030-001-01-9	zinc powder - zinc dust (stabilized) ⚠ Aquatic Acute 1, H400 (M=1); Aquatic Chronic 1, H410 (M=1)	0.25–<2.5%

· **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; consult doctor in case of symptoms.· **After skin contact** Instantly wash with water and soap and rinse thoroughly.· **After eye contact** Rinse opened eye for several minutes (at least 15 min) under running water. Then consult doctor.**After swallowing**

Rinse out mouth and then drink 1-2 glasses of water.

Seek medical treatment.

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

irritations

after inhalation:

coughing

mucous membrane irritation

breathing difficulty

after swallowing:

headache

sickness

vomiting

after swallowing of large amounts:

unconsciousness

Danger of system failure.

drop in blood pressure

narcotic conditions

CNS disorders

cardiovascular disorders

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

GB

(Contd. on page 3)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 10.10.2022

Version number 26 (replaces version 25)

Revision: 10.10.2022

Product name: Nitrate HR 1

(Contd. of page 2)

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents** CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
 - **For safety reasons unsuitable extinguishing agents** Water with a full water jet.
 - **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.
 - Hydrogen chloride (HCl)
 - Nitrogen oxides (NO_x)
 - Ammonia (NH₃)
 - Zinc oxide
 - **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.
 - Inform respective authorities in case product reaches water or sewage system.
 - **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.
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SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
- **Advice on safe handling:** No special precautions necessary if used correctly.
- **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.
 - Unsuitable material for container: metals, metal alloys
- **Information about storage in one common storage facility:**
 - Do not store together with alkalis (caustic solutions).
 - Store away from flammable substances.
 - Store away from water.
- **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.
 - Protect from humidity and keep away from water.

(Contd. on page 4)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 10.10.2022

Version number 26 (replaces version 25)

Revision: 10.10.2022

Product name: Nitrate HR 1

(Contd. of page 3)

This product is hygroscopic.

- **Recommended storage temperature:** 20°C +/- 5°C
- **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 ³ Long-term value: 10 mg/m ³
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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 ³ (Worker / long-term / systemic effects)
		9.4 mg/m ³ (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: ≥ 0.11 mm

- **Penetration time of glove material**

Value for the permeation: Level = 1 (< 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.

(Contd. on page 5)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 10.10.2022

Version number 26 (replaces version 25)

Revision: 10.10.2022

Product name: Nitrate HR 1

(Contd. of page 4)

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

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties	
· Physical state	Solid.
· Form:	Tablets
· Colour:	Grey
· Odour:	Odourless
· Odour threshold:	Not applicable.
· Melting point/Freezing point:	338°C (CAS 12125-02-9)
· Boiling point or initial boiling point and boiling range	Not determined.
· Flammability	The product is not combustible.
· Explosive properties:	Product is not explosive.
· Lower and upper explosion limit	
· Lower:	Not applicable.
· Upper:	Not applicable.
· Flash point:	Not applicable.
· Ignition temperature:	Not applicable (solid).
· Decomposition temperature:	Not determined.
· pH (10 g/l) at 20°C	7.3
· Kinematic viscosity	Not applicable (solid).
· Solubility	
· Water at 20°C:	372 g/l (CAS 12125-02-9) Partially insoluble.
· Partition coefficient n-octanol/water (log value)	Not applicable (mixture).
· Vapour pressure:	Not applicable.
· Density and/or relative density	
· Density at 20°C:	1.63 g/cm ³
· Relative density:	Not determined.
· Relative gas density	Not applicable (solid).
· Particle characteristics	Not determined.

9.2 Other information

Information with regard to physical hazard classes	
· Corrosive to metals	Void
· Other safety characteristics	
· Oxidising properties:	none
· Additional information	
· Solids content:	100 %

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**
 - Aqueous solution reacts acidic.
 - Reacts with halogenated compounds
 - Reacts with acids, alkalis and oxidizing agents
 - Reacts with peroxides
 - Reacts with moist air
 - Violent reactions possible with:
 - chlorine
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:**
 - combustible substances
 - aluminium
 - copper
 - Iron

(Contd. on page 6)

— GB —

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 10.10.2022

Version number 26 (replaces version 25)

Revision: 10.10.2022

Product name: Nitrate HR 1

(Contd. of page 5)

10.6 Hazardous decomposition products:

Hydrogen chloride (HCl)
 Ammonia (NH₃)
 Hydrogen
 (with water)
 In case of fire: see section 5.

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_(MX)) - Calculation method:

Oral	CLP ATE _(MX)	1439 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: 7440-66-6 zinc powder - zinc dust (stabilized)

Oral	LD50	>2000 mg/kg (rat) (Registrant, Echa: limit test, no mortality observed)
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• **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:

CAS 7440-66-6: Did not show teratogenic effects in animal experiments (IUCLID).

CAS 7440-66-6: Did not show carcinogenic effects in animal experiments (IUCLID).

CAS 7440-66-6: No impairment of reproductive performance in animal experiments (IUCLID).

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]

(Contd. on page 7)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 10.10.2022

Version number 26 (replaces version 25)

Revision: 10.10.2022

Product name: Nitrate HR 1

(Contd. of page 6)

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.**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 >100 mg/l/48h (Daphnia magna)

LC50 42.91 mg/l/96h (rainbow trout)
(Merck)**CAS: 7440-66-6 zinc powder - zinc dust (stabilized)**EC50 0.356 mg/l/48h (Daphnia magna)
(Merck)NOEC 0.169 mg/l/96h (fish) (30d)
(Registrant, ECHA: Cottus bairdii)NOEC 0.0727 mg/l (Daphnia magna) (21 d)
(Merck)EC50 0.106 mg/l/72h (Pseudokirchneriella subcapitata)
(Merck)LC50 0.238–0.269 mg/l/96h (fathead minnow)
(Merck)**Other information:**

Toxic for fish:

Zn > 0.1 mg/l

NH₄⁺ > 0.3 mg/l**12.2 Persistence and degradability****Other information:**

Mixture of inorganic compounds.

Methods for the determination of biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Pow = n-octanol/wasser partition coefficient

log Pow < 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 undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

(Contd. on page 8)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 10.10.2022

Version number 26 (replaces version 25)

Revision: 10.10.2022

Product name: Nitrate HR 1

(Contd. of page 8)

- **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.
 - **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.

- **Training hints** Provide adequate information, instruction and training for operators.
 - **Relevant phrases**
H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
 - **Abbreviations and acronyms:**
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. 4: Acute toxicity – Category 4
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
 - **Sources**
Data arise from safety data sheets, reference works and literature.
ECHA: European Chemicals Agency <http://echa.europa.eu>
GESTIS- Stoffdatenbank (Substance Database, Germany)
 - *** Data compared to the previous version altered.**
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