

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

Printing date 30.10.2023

Version number 3 (replaces version 2)

Revision: 30.10.2023

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

· **1.1 Product identifier**

· **Product name: KS358 - Ammonia Buffer Solution**

· **Catalog number:**

56Z035898, 56L0358, 56L035865, 56L035895, 56L035897, 56L035898, 56U035865, 56U035895, 56U035897, 56U035898

· **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**



GHS05 corrosion

Met. Corr. 1 H290 May be corrosive to metals.
Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.



GHS07

STOT SE 3 H335 May cause respiratory 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.

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Hazard pictograms


GHS05 GHS07

Signal word Danger

Hazard-determining components of labelling:

ammonia 18 %

Hazard statements

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

Precautionary statements

P260 Do not breathe mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+P310 IF exposed or concerned: Immediately call a POISON CENTER/doctor.

P390 Absorb spillage to prevent material damage.

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: aqueous solution

Dangerous components:

CAS: 1336-21-6 EINECS: 215-647-6 Index No: 007-001-01-2 Reg.nr.: 01-2119488876-14-XXXX	ammonia ⚠ Met. Corr. 1, H290; Skin Corr. 1B, H314; ⚠ Aquatic Acute 1, H400 (M=1); ⚠ STOT SE 3, H335 Specific concentration limit: STOT SE 3; H335: C ≥ 5 %	10–20%
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%

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.

After skin contact

Instantly wash with polyethylene glycol 400.

Instantly rinse with water.

Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.

After eye contact

Rinse opened eye for several minutes (at least 15 min) under running water.

Call a doctor immediately.

After swallowing

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

Do not induce vomiting; instantly call for medical help.

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

burns

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respiratory paralysis
 after inhalation:
 mucosal irritations, cough, shortness of breath
 strong caustic effect.
 after swallowing:
 headache
 gastric pain
 sickness
 vomiting
 narcotic conditions
 CNS disorders

- **Danger**

- Danger of system failure.

- Danger of pulmonary oedema.

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

- If swallowed or in case of vomiting, danger of entering the lungs

- Subsequent observation for pneumonia and pulmonary oedema

- Monitor circulation

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.

- Can form explosive gas-air mixtures.

- Formation of toxic gases is possible during heating or in case of fire.

- Ammonia (NH₃)

- Hydrogen chloride (HCl)

- Nitrogen oxides (NO_x)

- **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.

- Cool endangered containers with water spray jet.

- 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.

- Avoid substance contact.

- Ensure adequate ventilation

- Use breathing protection against the effects of fumes/dust/aerosol.

- **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.

- Absorb with liquid-binding material (sand, diatomite, universal binders).

- 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:**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Hygiene measures:**
Do not inhale gases / fumes / aerosols.
Do not get in eyes, on skin, or on clothing.
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:**
Store away from metals.
Do not store together with acids.
Do not store together with alkalis (caustic solutions).
Store away from oxidising agents.
- **Further information about storage conditions:**
Protect from heat and direct sunlight.
Protect from the effects of light.
Protect from humidity and keep away from water.
- **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: 1336-21-6 ammonia

Oral	DNEL	6.8 mg/kg (Consumer / acute / systemic effects)
		6.8 mg/kg (Consumer / long-term / systemic effects)
Dermal	DNEL	6.8 mg/kg (Worker / acute / systemic effects)
		6.8 mg/kg (Worker / long-term / systemic effects)
		68 mg/kg (Consumer / acute / systemic effects)
		68 mg/kg (Consumer / long-term / systemic effects)
Inhalative	DNEL	36 mg/m ³ (Worker / acute / local effects)
		47.6 mg/m ³ (Worker / acute / systemic effects)
		14 mg/m ³ (Worker / long-term / local effects)
		47.6 mg/m ³ (Worker / long-term / systemic effects)
		7.2 mg/m ³ (Consumer / acute / local effects)
		23.8 mg/m ³ (Consumer / acute / systemic effects)
		2.8 mg/m ³ (Consumer / long-term / local effects)
		23.8 mg/m ³ (Consumer / long-term / systemic effects)

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)

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Inhalative	DNEL	55.2 mg/kg (Consumer / long-term / systemic effects) 43.97 mg/m ³ (Worker / long-term / systemic effects) 9.4 mg/m ³ (Consumer / long-term / systemic effects)
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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: 1336-21-6 ammonia	
PNEC	0.00011 mg/l (Marine water) 0.0068 mg/l (Aquatic intermittent release) 0.0011 mg/l (Fresh water)
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** Tightly sealed 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

Fluorocarbon rubber (Viton)

Recommended thickness of the material: ≥ 0.4 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.

· **Recommended filter device for short term use:** Filter K (acc. to DIN 3181) for NH₃

· **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	Fluid
· Form:	Solution
· Colour:	Colourless
· Odour:	Pungent
· Odour threshold:	CAS 1336-21-6: 0.02 - 71 ppm NH ₃
· Melting point/Freezing point:	Not determined.
· Boiling point or initial boiling point and boiling range	Not determined.
· Flammability	The product is not combustible.

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· Explosive properties:	Product is not explosive. However, formation of explosive air/steam mixtures is possible.
· Lower and upper explosion limit	
Lower:	15.4 Vol % (CAS 1336-21-6, CAS: 1336-21-6 ammonia)
Upper:	33.6 Vol % (CAS 1336-21-6, CAS: 1336-21-6 ammonia)
· Flash point:	Not applicable.
· Auto-ignition temperature:	Not applicable.
· Decomposition temperature:	Not determined.
· pH at 20°C	10.5
· Kinematic viscosity	Not determined.
· Solubility	
· Water:	Fully miscible
· Partition coefficient n-octanol/water (log value)	Not applicable (mixture).
· Vapour pressure:	Not determined.
· Density and/or relative density	
· Density at 20°C:	0.98 g/cm ³
· Relative density:	Not determined.
· Relative gas density	Not determined.
· Particle characteristics	Not applicable (liquid).
· 9.2 Other information	
· Information with regard to physical hazard classes	
· Corrosive to metals	May be corrosive to metals.
· Metals that are corroded by the substance or mixture	Information on incompatible materials can be found in Sections 7 and 10.
· Other safety characteristics	
· Oxidising properties:	none
· Additional information	
· Solids content:	< 20 %
· Solvent content:	
· Organic solvents:	0.0 %
· Water:	> 65 %

SECTION 10: Stability and reactivity

- **10.1 Reactivity** Fumes can combine with air to form an explosive mixture.
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**
 - Corrosive action on metals
 - Reacts with halogenated compounds
 - Reacts with various metals
 - Reacts with acids, alkalis and oxidizing agents
 - Violent reactions possible with:
 - chlorine
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:**
 - aluminium
 - copper
 - zinc
 - Iron
- **10.6 Hazardous decomposition products:**
 - Hydrogen chloride (HCl)
 - Ammonia (NH₃)
 - 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** Based on available data, the classification criteria are not met.

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· LD/LC50 values that are relevant for classification:		
CAS: 1336-21-6 ammonia		
Oral	LDo	43 mg/kg (human) (29% solution, RTECS)
CAS: 12125-02-9 ammonium chloride		
Oral	LD50	1410 mg/kg (rat) (OECD 1410) (Merck)

- **Skin corrosion/irritation** Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**
Causes serious eye damage.
Risk of blindness!

· Information on components:		
CAS: 12125-02-9 ammonium chloride		
Irritation of eyes	OECD 405	(rabbit: irritation)

- **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)

- **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)

- **STOT (specific target organ toxicity) -single exposure** May cause respiratory irritation.
- **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:**

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

CAS: 1336-21-6 ammonia		
· (source: GESTIS)		
Main toxic effects:		
acute: Irritant and caustic effect on eyes and skin, respiratory tract irritation/damage from released gas/aerosol.		
Severe damage to the digestive tract if ingested		
chronic: chronic irritation of the respiratory tract/ respiratory diseases		
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

Other dangerous properties can not be excluded.

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: 1336-21-6 ammonia

EC50	24 mg/l/48h (Daphnia magna)
	1.16 mg/l/48h (Daphnia pulex)
LC50	0.53 mg/l/96h (rainbow trout)

CAS: 12125-02-9 ammonium chloride

EC50	>100 mg/l/48h (Daphnia magna)
LC50	42.91 mg/l/96h (rainbow trout) (Merck)

Other information:

Toxic for fish:

NH_4^+ > 0.3 mg/l

12.2 Persistence and degradability
12.3 Bioaccumulative potential

Pow = n-octanol/wasser partition coefficient

log Pow < 1 = Does not accumulate in organisms.

CAS: 1336-21-6 ammonia

log Pow	-1.38 (.) (experimental)
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CAS: 12125-02-9 ammonium chloride

log Pow	-4.37 (.)
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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.

Forms corrosive mixtures with water even if diluted.

Harmful effect due to pH shift.

Avoid transfer into the environment.

Water hazard:

Do not allow product to reach ground water, water bodies or sewage system.

Danger to drinking water if even 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
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Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

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

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SECTION 14: Transport information

<ul style="list-style-type: none"> · 14.1 UN number or ID number · ADR, IMDG, IATA 	UN2672
<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG, IATA 	2672 AMMONIA SOLUTION AMMONIA SOLUTION
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR 	<div style="text-align: center;">  </div>
<ul style="list-style-type: none"> · Class · Label 	8 (C5) Corrosive substances. 8
<ul style="list-style-type: none"> · IMDG, IATA 	<div style="text-align: center;">  </div>
<ul style="list-style-type: none"> · Class · Label 	8 Corrosive substances. 8
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	III
<ul style="list-style-type: none"> · 14.5 Environmental hazards: 	Not applicable.
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Kemler Number: · EMS Number: · Segregation groups · Stowage Category · Stowage Code · Segregation Code 	Warning: Corrosive substances. 80 F-A,S-B (SGG18) Alkalis A SW2 Clear of living quarters. SW5 If under deck, stow in a mechanically ventilated space. SG35 Stow "separated from" SGG1-acids
<ul style="list-style-type: none"> · 14.7 Maritime transport in bulk according to IMO instruments 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: 	<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Excepted quantities (EQ)
<ul style="list-style-type: none"> · Transport category · Tunnel restriction code 	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml 3 E
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

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.

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· Regulated poisons	
None of the ingredients is listed.	
· Reportable explosives precursors	
None of the ingredients is listed.	
· Reportable poisons	
The substance falls under reportable poisons due to the fact that the concentration is greater than/equal ($\geq x\%$) the stated mass percentage:	
CAS: 1336-21-6	ammonia 10%
· 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.	
· 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: 3, 65	
· Information about limitation of use: Employment restrictions concerning young persons must be observed (94/33/EC).	
· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.	

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

H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.

· 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

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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

Met. Corr. 1: Corrosive to metals – Category 1

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

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

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

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

· Sources

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

RTECS (Registry of Toxic Effects of Chemical Substances)

GESTIS- Stoffdatenbank (Substance Database, Germany)

· * Data compared to the previous version altered.

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