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

Printing date 15.11.2023 Version number 15 (replaces version 14) Revision: 15.11.2023

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

· **1.1 Product identifier**

· **Product name: Residual Hardness RH-2 (Resthärte)**

· **Catalog number:** 424343, 418554-2, 418514-2, 424343-0

· **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**


GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.


GHS07

Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.
STOT SE 3 H336 May cause drowsiness or dizziness.

· **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**


GHS02 GHS07

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Product name: Residual Hardness RH-2 (Resthärte)

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· **Signal word** Warning
· **Hazard-determining components of labelling:**
propan-2-ol
· **Hazard statements**
H226 Flammable liquid and vapour.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
· **Precautionary statements**
P210 Keep away from heat. - No smoking.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P403+P235 Store in a well-ventilated place. Keep cool.

· **2.3 Other hazards**
Vapours have anaesthetic effect.
At long or repeated contact with skin it may cause dermatitis due to the degreasing effect of the solvent.
Vapours of the product are heavier than air and may accumulate on the ground, in mines, drains or cellars with higher concentration.

· **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:** Solvent mixture with additives.

· **Dangerous components:**		
CAS: 67-63-0 EINECS: 200-661-7 Index No: 603-117-00-0 Reg.nr.: 01-2119457558-25-XXXX	propan-2-ol Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	20–30%
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 %	1–<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.
If skin irritation continues, consult a doctor.
· **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
breathing difficulty
headache
fatigue

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drowsiness
after swallowing:
sickness
vomiting
diarrhoea
pain
· **Danger** Condition may deteriorate with alcohol consumption.
· **4.3 Indication of any immediate medical attention and special treatment needed:**
If swallowed or in case of vomiting, danger of entering the lungs

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents**
CO_2, extinguishing powder or water spay jet. Fight larger fires with water spray 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**
Can form explosive gas-air mixtures.
combustible
Formation of toxic gases is possible during heating or in case of fire.
Nitrogen oxides (NOx)
Ammonia (NH_3)
Carbon monoxide (CO) and carbon dioxide (CO_2)
· **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.
Avoid substance contact.
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.
Prevent material from reaching sewage system, holes and cellars.
Damp down gases/fumes/haze with water spray jet.
· **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.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
· **Advice on safe handling:**
Work only in fume cupboard.
Use only in well ventilated areas.
Prevent formation of aerosols.
Protect from heat.
Keep ignition sources away - Do not smoke.

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Take action to prevent static discharges.

· **Hygiene measures:**
Do not inhale gases / fumes / aerosols.
Avoid contact with the skin.
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.
Do not use light alloy containers.
Unsuitable material for container: metals, metal alloys
· **Information about storage in one common storage facility:** Store away from oxidising agents.
· **Further information about storage conditions:**
Store in cool, dry conditions in well sealed containers.
Protect from heat and direct sunlight.
Store in the dark.
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: 67-63-0 propan-2-ol	
WEL (Great Britain)	Short-term value: 1250 mg/m³, 500 ppm Long-term value: 999 mg/m³, 400 ppm

· **Regulatory information** WEL (Great Britain): EH40/2020

· **DNELs**		
CAS: 67-63-0 propan-2-ol		
Oral	DNEL	26 mg/kg (Consumer / long-term / systemic effects)
Dermal	DNEL	888 mg/kg (Worker / long-term /systemic effects)
		319 mg/kg (Consumer / long-term / systemic effects)
Inhalative	DNEL	500 mg/m³ (Worker / long-term /systemic effects)
		89 mg/m³ (Consumer / long-term / systemic effects)
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/m³ (Worker / acute / local effects)
		47.6 mg/m³ (Worker / acute / systemic effects)
		14 mg/m³ (Worker / long-term / local effects)
		47.6 mg/m³ (Worker / long-term /systemic effects)
		7.2 mg/m³ (Consumer / acute / local effects)
		23.8 mg/m³ (Consumer / acute / systemic effects)
		2.8 mg/m³ (Consumer / long-term / local effects)
		23.8 mg/m³ (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.

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· **PNECs**

CAS: 67-63-0 propan-2-ol	
PNEC	140.9 mg/l (Marine water)
	140.9 mg/l (Fresh water)
PNEC	28 mg/kg (Soil)
	552 mg/kg (Marine sediment)
	552 mg/kg (Fresh water sediment)
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)

· **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**
Apply solvent resistant clothing before beginning work.
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 trough 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:** Combination filter A-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**	Fluid
· **Form:**	Solution
· **Colour:**	Dark green
· **Odour:**	Ammonia-like
· **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**	82°C (CAS: 67-63-0 propan-2-ol)
· **Flammability**	Combustible liquid.
· **Explosive properties:**	Product is not explosive. However, formation of explosive air/steam mixtures is possible.
· **Lower and upper explosion limit**	
Lower:	2 Vol % (CAS: 67-63-0 propan-2-ol)
Upper:	13.4 Vol % (CAS: 67-63-0 propan-2-ol)
· **Flash point:**	24.5°C (DIN EN ISO 13736)
· **Auto-ignition temperature:**	324°C (CAS: 102-71-6 Triethanolamine)
· **Decomposition temperature:**	Not determined.
· **pH at 20°C**	10.5
· **Kinematic viscosity**	Not determined.
· **Solubility**	
· **Water:**	Fully miscible

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· **Partition coefficient n-octanol/water (log value)**	Not applicable (mixture).
· **Vapour pressure at 20°C:**	43 hPa (CAS: 67-63-0 propan-2-ol)
· **Density and/or relative density**	
· **Density at 20°C:**	1.03 g/cm³
· **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**	Void
· **Other safety characteristics**	
· **Oxidising properties:**	none
· **Additional information**	
· **Solids content:**	< 1 %
· **Solvent content:**	
· **Organic solvents:**	> 90 %
· **Water:**	< 5 %

SECTION 10: Stability and reactivity

· **10.1 Reactivity**
Fumes can combine with air to form an explosive mixture.
Possible formation of peroxide
· **10.2 Chemical stability**
sensitive to air
sensitivity to light
· **10.3 Possibility of hazardous reactions**
In contact with nitrites, nitrates or nitrous acid possible release of nitrosamines (carcinogenic)!
Exothermic reaction with acids
Reacts with various metals
Reacts with alkaline metals
Reacts with alkaline earth metals
Reacts with acid chlorides
Reacts with oxidizing agents
· **10.4 Conditions to avoid** Heating.
· **10.5 Incompatible materials:**
light metals
aluminium
non-ferrous metal
rubber
various plastics
· **10.6 Hazardous decomposition products:**
peroxides
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.

· **LD/LC50 values that are relevant for classification:**

CAS: 67-63-0 propan-2-ol

Oral	LD50	5045 mg/kg (rat) (RTECS)
	LDLo	3570 mg/kg (human) (RTECS)
Dermal	LD50	12800 mg/kg (rabbit) (RTECS)
Inhalative	LC50/4h	37.5 mg/l (rat) (OECD 403, vapour)

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CAS: 1336-21-6 ammonia		
Oral	LDo	43 mg/kg (human) (29% solution, RTECS)

· **Skin corrosion/irritation** Causes skin irritation.
· **Serious eye damage/irritation** Causes serious eye irritation.

· **Information on components:**		
CAS: 67-63-0 propan-2-ol		
Irritation of skin	OECD 404	(rabbit: no irritation)
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: 67-63-0 propan-2-ol		
Sensitisation	OECD 406	(guinea pig: negative) (IUCLID)

· **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 67-63-0: Did not show carcinogenic effects in animal experiments.
OECD 414: Teratogenicity testing
OECD 473: Mutagenicity testing
OECD 471, 474, 476, 487: Germ cell mutagenicity testing

CAS: 67-63-0 propan-2-ol	
OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test) (Salmonella typhirium, IUCLID)
OECD 476	(negative) (In Vitro Mammalian Cell Gene Mutation Test)
OECD 474	(negative) (Mammalian Erythrocyte Micronucleus Test)

· **STOT (specific target organ toxicity) -single exposure** May cause drowsiness or dizziness.
· **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**
The main route of uptake for 2-propanol under commercial conditions is through the respiratory tract. [GESTIS]

· **Additional toxicological information:**
Inhalation of concentrated vapours as well as oral intake will lead to anaesthesia-like conditions and headache, dizziness, etc.
In addition to local irritant manifestations, there is a narcotic effect when inhaling high concentrations, with the danger of central respiratory arrest.
Under given conditions, contact with nitrites or nitric acid can lead to the formation of nitrosamines, which have shown themselves to be carcinogenic in animal experiments.

CAS: 67-63-0 propan-2-ol
. (source: GESTIS) Main toxic effects: acute: irritating effect of the vapors (depending on the concentration) on the mucous membranes; irritating effect of the liquid on the eyes and mucous membranes of the digestive tract. Systemic effects after massive intoxication: disturbance of the central nervous and cardiovascular systems chronic: skin damage (very rare), no reports of systemic effects from exposure under industrial conditions
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

· **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: 67-63-0 propan-2-ol	
EC50	13299 mg/l/48h (Daphnia magna) (IUCLID)
EC5	4930 mg/l (Entosiphon sulcatum) (72h)
IC50	>1000 mg/l/72h (Desmodesmus subspicatus) (IUCLID)
LC50	1400 mg/l/96h (bluegill) (ECOTOX)
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)

· **Bacterial toxicity:**	
CAS: 67-63-0 propan-2-ol	
EC5	1050 mg/l (Pseudomonas putida) (16h)

· **Other information:**
Toxic for fish:
NH_4^+ > 0.3 mg/l

· **12.2 Persistence and degradability**	
CAS: 67-63-0 propan-2-ol	
OECD 301 E	95 % / 21 d, aerob (readily biodegradable) (Modified OECD Screening Test)

· **12.3 Bioaccumulative potential**
Pow = n-octanol/wasser partition coefficient
log Pow 1-3 = Not worth-mentioning accumulating in organisms.
log Pow < 1 = Does not accumulate in organisms.

CAS: 67-63-0 propan-2-ol	
log Pow	0.05 (.) (OECD 107)
CAS: 1336-21-6 ammonia	
log Pow	-1.38 (.) (experimental)

· **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** 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.
Must not reach sewage water or drainage ditch undiluted or unneutralised.

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.

SECTION 14: Transport information

· **14.1 UN number or ID number**
· **ADR, IMDG, IATA** UN1993

· **14.2 UN proper shipping name**
· **ADR** 1993 FLAMMABLE LIQUID, N.O.S. (ISOPROPANOL (ISOPROPYL ALCOHOL))
· **IMDG, IATA** FLAMMABLE LIQUID, N.O.S. (ISOPROPANOL)

· **14.3 Transport hazard class(es)**

· **ADR**

· **Class** 3 (F1) Flammable liquids.
· **Label** 3

· **IMDG, IATA**

· **Class** 3 Flammable liquids.
· **Label** 3

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

· **14.5 Environmental hazards:** Not applicable.

· **14.6 Special precautions for user** Warning: Flammable liquids.
· **Kemler Number:** 30
· **EMS Number:** F-E,S-E
· **Stowage Category** A

· **14.7 Maritime transport in bulk according to IMO instruments** Not applicable.

· **Transport/Additional information:**

· **ADR**
· **Limited quantities (LQ)** 5L
· **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml
· **Transport category** 3
· **Tunnel restriction code** D/E

· **IMDG**
· **Limited quantities (LQ)** 5L
· **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

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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**
The concentration of the substance is less than the stated mass percentage and is therefore of no concern:

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:**

CAS: 102-71-6	Triethanolamine

· **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 ≥ 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 ≥ 0.1% (w / w).

· **Directive 2012/18/EU (SEVESO III):**
· **Named dangerous substances - ANNEX I** None of the ingredients is listed.
· **Seveso category** P5c FLAMMABLE LIQUIDS
· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5000 t
· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50000 t

· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

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

· **National regulations**

· **VOC-value EC:** 999.2 g/l

· **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.
This Safety Data Sheets 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.

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· **Relevant phrases**
H225 Highly flammable liquid and vapour.
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
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
c.c.: closed cup
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
Flam. Liq. 2: Flammable liquids – Category 2
Flam. Liq. 3: Flammable liquids – Category 3
Met. Corr.1: Corrosive to metals – Category 1
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
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
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

· **Sources**
Data arise from safety data sheets, reference works and literature.
ECOTOX Database
IUCLID (International Uniform Chemical Information Database)
RTECS (Registry of Toxic Effects of Chemical Substances)
GESTIS- Stoffdatenbank (Substance Database, Germany)

· *** Data compared to the previous version altered.**