

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

Printing date 27.10.2023

Version number 36 (replaces version 35)

Revision: 27.10.2023

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

· **1.1 Product identifier**

· **Product name: Chloride-52**

· **Catalog number:** 424272, 424272-0

· **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**



GHS06 skull and crossbones

Acute Tox. 3 H311 Toxic in contact with skin.



GHS08 health hazard

STOT RE 2 H373 May cause damage to the kidneys through prolonged or repeated exposure.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

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Acute Tox. 4 H332 Harmful if inhaled.

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

GHS06 GHS08 GHS09

Signal word Danger**Hazard-determining components of labelling:**ethane-1,2-diol
mercury dithiocyanate**Hazard statements**

H302+H332 Harmful if swallowed or if inhaled.

H311 Toxic in contact with skin.

H373 May cause damage to the kidneys through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

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.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

P405 Store locked up.

Additional information:

EUH032 Contact with acids liberates very toxic gas.

2.3 Other hazards

CAS 107-21-1 / 592-85-8: Danger by skin resorption.

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**Dangerous components:**

The percent content of the mercury compound mentioned below refers to the amount of the pure mercury therein.

CAS: 107-21-1 EINECS: 203-473-3 Index No: 603-027-00-1 Reg.nr.: 01-2119456816-28-XXXX	ethane-1,2-diol STOT RE 2, H373; Acute Tox. 4, H302	90–100%
CAS: 592-85-8 EINECS: 209-773-0 Index No: 080-002-00-6	mercury dithiocyanate Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; STOT RE 2, H373; Aquatic Acute 1, H400 (M=100); Aquatic Chronic 1, H410 (M=100), EUH032 Specific concentration limit: STOT RE 2; H373: C ≥ 0.1 %	0.25–≤2.5%

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

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SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information**
Personal protection for the First Aider!
Instantly remove any clothing soiled by the product.
Remove breathing apparatus only after soiled clothing has been completely removed.
- **After inhalation**
Supply fresh air or oxygen; call for doctor.
In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After skin contact**
Instantly wash with water and soap and rinse thoroughly.
Seek immediate medical advice.
- **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.
Induce vomiting.
- **4.2 Most important symptoms and effects, both acute and delayed:**
after swallowing and inhalation:
 - metallic taste
 - sickness
 - vomiting
 - pain
 - bloody diarrhoea
 - drop in blood pressure
 - CNS disorders
 - ataxia (impaired locomotor coordination)
 - fatigue
- **Danger**
Danger of pulmonary oedema.
Danger of system failure.
Danger of disturbed cardiac rhythm.
- **4.3 Indication of any immediate medical attention and special treatment needed:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents**
CO₂, extinguishing powder or water spray 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.
Can be released in case of fire:
 - nitrous gases
 - mercury vapours
 - hydrogen cyanide (prussic acid HCN)
 - Carbon monoxide (CO) and carbon dioxide (CO₂)
- **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.

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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
- 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.
- Inform respective authorities in case product reaches water or sewage system.
- Dilute with much water.

· 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:

- Open and handle container with care.
- Work only in fume cupboard.
- Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
- Prevent formation of aerosols.
- Keep ignition sources away - Do not smoke.

· Hygiene measures:

- Do not inhale gases / fumes / aerosols.
- Avoid contact with the skin.
- 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.
- Protect from heat.

· Information about storage in one common storage facility:

- Store away from oxidising agents.
- Do not store together with acids.

· Further information about storage conditions:

- Store in a locked cabinet or with access restricted to technical experts or their assistants.
- 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.
- 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: 107-21-1 ethane-1,2-diol

WEL (Great Britain)	Short-term value: 104** mg/m ³ , 40** ppm Long-term value: 10* 52** mg/m ³ , 20** ppm Sk *particulate **vapour
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IOELV (European Union)	Short-term value: 104 mg/m ³ , 40 ppm Long-term value: 52 mg/m ³ , 20 ppm Skin
CAS: 592-85-8 mercury dithiocyanate	
WEL (Great Britain)	Long-term value: 0.02 mg/m ³ as Hg
BOELV (European Union)	Long-term value: 0.02 mg/m ³ as Hg
IOELV (European Union)	Long-term value: 0.02 mg/m ³ as Hg

Regulatory information

WEL (Great Britain): EH40/2020
IOELV (European Union): (EU) 2019/1831
BOELV (European Union): EU 2022/431

· **Additional information:** IOELV = Indicative Occupational Exposure Limit

DNELs

Derived No Effect Level (DNEL)

CAS: 107-21-1 ethane-1,2-diol		
Dermal	DNEL	106 mg/kg (Worker / long-term / systemic effects) 53 mg/kg (Consumer / long-term / systemic effects)
Inhalative	DNEL	35 mg/m ³ (Worker / long-term / local effects) 7 mg/m ³ (Consumer / long-term / local 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: 107-21-1 ethane-1,2-diol	
PNEC	1 mg/l (Marine water) 10 mg/l (Aquatic intermittent release) 10 mg/l (Fresh water)
PNEC	1.53 mg/kg (Soil) 199.5 mg/kg (Sewage treatment plant) 20.9 mg/kg (Fresh water sediment)

Ingredients with biological limit values:**CAS: 592-85-8 mercury dithiocyanate**

BMGV (Great Britain)	20 µmol/mol creatinine Medium: urine Sampling time: random Parameter: mercury
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· **Regulatory information** BMGV (Great Britain): EH40/2011

· **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.

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

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- **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-P3
- **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:** Sweetish
- **Odour threshold:** Not determined.
- **Melting point/Freezing point:** Not determined.
- **Boiling point or initial boiling point and boiling range** 197°C (CAS: 107-21-1 ethane-1,2-diol)
- **Flammability** Combustible liquid.
- **Explosive properties:** Product is not explosive. However, formation of explosive air/steam mixtures is possible.
- **Lower and upper explosion limit**
- **Lower:** 3.2 Vol % (CAS 107-21-1, CAS: 107-21-1 ethane-1,2-diol)
- **Upper:** 15.3 Vol % (CAS 107-21-1, CAS: 107-21-1 ethane-1,2-diol)
- **Flash point:** 116°C (CAS107-21-1, c.c. CAS: 107-21-1 ethane-1,2-diol)
- **Auto-ignition temperature:** 410°C (CAS: 107-21-1 ethane-1,2-diol)
- **Decomposition temperature:** > 110°C (CAS 592-85-8)
- **pH at 20°C** 5.1
- **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:** 1.11 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:** < 2.5 %
- **Solvent content:**
- **Organic solvents:** 90-100 %
- **Water:** 0 %

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**
Contact with acids releases toxic gases
Reacts with acids, alkalis and oxidizing agents
Reacts with peroxides
- **10.4 Conditions to avoid** strong heating
- **10.5 Incompatible materials:**
aluminium

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various plastics

10.6 Hazardous decomposition products:

Inflammable gases/vapours

Toxic metal compounds

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 or if inhaled.

Toxic in contact with skin.

LD/LC50 values that are relevant for classification:**CAS: 107-21-1 ethane-1,2-diol**

Oral	LD50	500 mg/kg (ATE)
	LD50.	4700 mg/kg (rat) (IUCLID)
	LDLo	786 mg/kg (human) (RTECS)
Dermal	LD50	9530 mg/kg (rabbit)
Inhalative	LC50	>2.5 mg/l/6h (rat) (Aerosol) (Registrant, ECHA)

CAS: 592-85-8 mercury dithiocyanate

Oral	LD50	46 mg/kg (rat) (RTECS)
Dermal	LD50	5 mg/kg (ATE)
Inhalative	LC50/4h	0.05 mg/l (ATE)

· **Skin corrosion/irritation** Based on available data, the classification criteria are not met.· **Serious eye damage/irritation** Based on available data, the classification criteria are not met.**Information on components:****CAS: 107-21-1 ethane-1,2-diol**

Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 405	(rabbit: no irritation)

· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.**Information on components:****CAS: 107-21-1 ethane-1,2-diol**

Sensitisation	Patch test (human)	(negative)
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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 107-21-1: Did not show carcinogenic effects in animal experiments.

CAS: 107-21-1 ethane-1,2-diol

OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test) (Escheria 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**

May cause damage to the kidneys through prolonged or repeated exposure.

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

Mercury compounds have a cytotoxic and protoplasmatoxic effect.

The principal signs manifest themselves in the CNS.

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CAS: 107-21-1 ethane-1,2-diol

(source: GESTIS)

Acute: mild irritant effect on mucous membranes and skin;
neurotoxic effect, cardiovascular disorders, metabolic changes, kidney damage
chronic: increased irritant effect on mucous membranes;
no reliable data on resorptive effects in humans available [GESTIS].

· **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: 107-21-1 ethane-1,2-diol**

LC50 >100 mg/l/48h (Daphnia magna) (OECD 202)

EC5 >10000 mg/l (Entosiphon sulcatum) (72h)

LC50 >18500 mg/l/96h (rainbow trout)

CAS: 592-85-8 mercury dithiocyanate

EC50 0.0052 mg/l/48h (Daphnia magna)

IC50 0.162 mg/l/96 h (Desmodesmus subspicatus)
(Merck; Ankistrodesmus falcatus)

LC50 0.15 mg/l/96h (fathhead minnow)

· **Bacterial toxicity:****CAS: 107-21-1 ethane-1,2-diol**

EC5 >10000 mg/l (Pseudomonas putida) (DIN 38412, 16h)

EC50 >10000 mg/l (Pseudomonas putida) (16h)

· **12.2 Persistence and degradability**

The solvent is biodegradable.

CAS: 107-21-1 ethane-1,2-diol

OECD 301 A 100 % / 10 d (readily biodegradable) (Die-Away Test)

· **12.3 Bioaccumulative potential**

Pow = n-octanol/wasser partition coefficient

log Pow < 1 = Does not accumulate in organisms.

CAS: 107-21-1 ethane-1,2-diol

log Pow -1.36 (.) (experimental)

CAS: 592-85-8 mercury dithiocyanate

log Pow -0.57 (.)

· **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 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.

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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:**

Packagings that cannot be cleaned are to be disposed of in the same manner as the product.

Disposal must be made according to official regulations.

SECTION 14: Transport information**· 14.1 UN number or ID number****· ADR, IMDG, IATA**

UN3287

· 14.2 UN proper shipping name**· ADR**

3287 TOXIC LIQUID, INORGANIC, N.O.S. (MERCURY THIOCYANATE), ENVIRONMENTALLY HAZARDOUS

· IMDG

TOXIC LIQUID, INORGANIC, N.O.S. (MERCURY THIOCYANATE), MARINE POLLUTANT

· IATA

TOXIC LIQUID, INORGANIC, N.O.S. (MERCURY THIOCYANATE)

· 14.3 Transport hazard class(es)**· ADR****· Class**

6.1 (T4) Toxic substances.

· Label

6.1

· IMDG**· Class**

6.1 Toxic substances.

· Label

6.1

· IATA**· Class**

6.1 Toxic substances.

· Label

6.1

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

III

· 14.5 Environmental hazards:

Product contains environmentally hazardous substances: mercury dithiocyanate

· Marine pollutant:

Symbol (fish and tree)

· Special marking (ADR):

Symbol (fish and tree)

· 14.6 Special precautions for user

Warning: Toxic substances.

· Kemler Number:

60

· EMS Number:

F-A,S-A

· Segregation groups

(SGG7) Heavy metals and their salts (including their organometallic compounds)

· Stowage Category

A

· Stowage Code

SW2 Clear of living quarters.

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· 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	2
· Tunnel restriction code	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

* 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**

CAS: 592-85-8 | mercury dithiocyanate

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)**

CAS: 592-85-8 | mercury dithiocyanate

Annex I Part 1
Annex I Part 3
Annex V Part 2

· **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.

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- **Seveso category** E1 Hazardous to the Aquatic Environment
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 18
- **Information about limitation of use:**
Employment restrictions concerning young persons must be observed (94/33/EC).
Employment restrictions concerning pregnant and lactating women must be observed (92/85/EEC).
- **National regulations**
- **VOC-value EC:** 1122.1 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.

- **Training hints** Provide adequate information, instruction and training for operators.
- **Relevant phrases**
 - H300 Fatal if swallowed.
 - H302 Harmful if swallowed.
 - H310 Fatal in contact with skin.
 - H330 Fatal if inhaled.
 - H373 May cause damage to organs through prolonged or repeated exposure.
 - H400 Very toxic to aquatic life.
 - H410 Very toxic to aquatic life with long lasting effects.
 - EUH032 Contact with acids liberates very toxic gas.
- **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. 2: Acute toxicity – Category 2
 - Acute Tox. 4: Acute toxicity – Category 4
 - Acute Tox. 1: Acute toxicity – Category 1
 - Acute Tox. 3: Acute toxicity – Category 3
 - STOT RE 2: Specific target organ toxicity (repeated exposure) – 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
- **Sources**
 - Data arise from safety data sheets, reference works and literature.
 - IUCLID (International Uniform Chemical Information Database)
 - RTECS (Registry of Toxic Effects of Chemical Substances)
 - ECHA: European CHemicals Agency <http://echa.europa.eu>
 - GESTIS- Stoffdatenbank (Substance Database, Germany)
- *** Data compared to the previous version altered.**