

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

Printing date 25.12.2023

Version number 6 (replaces version 5)

Revision: 12.07.2023

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

· **1.1 Product identifier**

· **Trade name:** chloroform

· **Chemical Identification:**

*trichloromethane*

*trichloromethane*

· **Article number:** 0308

· **CAS Number:**

*67-66-3*

· **EC number:**

*200-663-8*

· **Index number:**

*602-006-00-4*

· **Registration number** 01-2119486657-20-XXXX

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

*Only for the use of professionals users*

· **Sector of Use**

*SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites*

*SU9 Manufacture of fine chemicals*

*SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)*

*SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)*

*SU24 Scientific research and development*

· **Product category**

*PC19 Intermediate*

*PC21 Laboratory chemicals*

*PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents*

*PC29 Pharmaceuticals*

*PC40 Extraction agents*

· **Process category**

*PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.*

*PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions*

*PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition*

*PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities*

*PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities*

*PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)*

*PROC15 Use as laboratory reagent*

· **Environmental release category**

*ERC1 Manufacture of the substance*

*ERC6a Use of intermediate*

*ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)*

· **Application of the substance / the mixture**

*Chemical for research, development, manufacturing, laboratory chemical for analysis.*

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

· **Manufacturer/Supplier:**

*Biosolve Chimie*

*20 Rue Roger Husson, 57260 Dieuze, France*

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Tel: +33 3 878 675 80/81/82/83/84/85  
Email: [info@biosolvechimie.com](mailto:info@biosolvechimie.com)

Biosolve B.V.  
Leenderweg 78, 5555 CE Valkenswaard, the Netherlands.  
Tel: +31-(0)40-2071300  
Fax: +31-(0)40-2048537  
Email: [info@biosolve-chemicals.com](mailto:info@biosolve-chemicals.com)

- **Further information obtainable from:** Product safety department.
- **1.4 Emergency telephone number:**  
Contact list of appointed bodies for information relating to emergency health response, according to Art. 45(1) Reg. (EC) No 1272/2008.  
See below section 16 or at <https://poisoncentres.echa.europa.eu/home>.  
Help desk: <http://echa.europa.eu/web/guest/support/helpdesks/national-helpdesks/list-of-national-helpdesks>.  
Data from: ECHA - EUROPEAN CHEMICALS AGENCY  
For more information see section 16.

**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 H331 Toxic if inhaled.



GHS08 health hazard

Carc. 2 H351 Suspected of causing cancer.

Repr. 2 H361d Suspected of damaging the unborn child.

STOT RE 1 H372 Causes damage to the central nervous system, the kidneys, the liver and the respiratory system through prolonged or repeated exposure.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

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- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS06 GHS08

- **Signal word** *Danger*
- **Hazard statements**
  - H302 Harmful if swallowed.
  - H331 Toxic if inhaled.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H351 Suspected of causing cancer.
  - H361d Suspected of damaging the unborn child.
  - H372 Causes damage to the central nervous system, the kidneys, the liver and the respiratory system through prolonged or repeated exposure.
- **Precautionary statements**
  - P260 Do not breathe dust/fume/gas/mist/vapours/spray.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
  - P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
  - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P405 Store locked up.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Additional information:**  
For use in industrial installations only.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

**SECTION 3: Composition/information on ingredients**

- **3.1 Substances**
- **CAS No. Description**  
CAS: 67-66-3 chloroform
- **Identification number(s)**
- **EC number:** 200-663-8

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**SECTION 4: First aid measures**

· **4.1 Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Remove breathing equipment only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· **After inhalation:**

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:** Call for a doctor immediately.

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

No further relevant information available.

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

No further relevant information available.

**SECTION 5: Firefighting measures**

· **5.1 Extinguishing media**

· **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.

· **5.2 Special hazards arising from the substance or mixture** No further relevant information available.

· **5.3 Advice for firefighters**

· **Protective equipment:** Mouth respiratory protective device.

**SECTION 6: Accidental release measures**

· **6.1 Personal precautions, protective equipment and emergency procedures** Not required.

· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:**

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

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

· **6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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**SECTION 7: Handling and storage**

**7.1 Precautions for safe handling**

Avoid breathing vapor. Avoid contact with skin and eyes. Avoid ingestion and inhalation.  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.

**Information about fire - and explosion protection:** Keep respiratory protective device available.

**7.2 Conditions for safe storage, including any incompatibilities**

**Storage:**

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** Keep container tightly sealed.

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

**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

**Ingredients with limit values that require monitoring at the workplace:**

**CAS: 67-66-3 chloroform**

IOELV	Long-term value: 10 mg/m <sup>3</sup> , 2 ppm
	Skin

**DNELs**

67-66-3

Worker DNEL, acute Systemic effects inhalation 333 mg/m<sup>3</sup>

Worker DNEL, longterm Systemic effects inhalation 2,5 mg/m<sup>3</sup>

Worker DNEL, longterm Systemic effects dermal 0,94 mg/kg Body weight

Worker DNEL, longterm Local effects inhalation 2,5 mg/m<sup>3</sup>

Consumer DNEL, longterm Systemic effects inhalation 0,18 mg/m<sup>3</sup>

**PNECs**

67-66-3

PNEC Fresh water 0,146 mg/l

PNEC Fresh water sediment 0,45 mg/kg

PNEC Marine water 0,015 mg/l

PNEC Marine sediment 0,09 mg/kg

PNEC Aquatic intermittent release 0,133 mg/l

PNEC Soil 0,56 mg/kg

PNEC Sewage treatment plant 0,048 mg/l

**Additional information:** The lists valid during the making were used as basis.

**8.2 Exposure controls**

**Appropriate engineering controls** No further data; see section 7.

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

**General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

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*Wash hands before breaks and at the end of work.*

*Store protective clothing separately.*

*Avoid contact with the eyes and skin.*

· **Respiratory protection:**

*Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).*

*In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.*

· **Hand protection**

*Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.*

*The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.*



*Protective gloves*

*The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.*

*Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation*

· **Material of gloves**

*Fluorocarbon rubber (Viton)*

*The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.*

· **Penetration time of glove material**

*Full contact*

*Material: Fluorinated rubber*

*Minimum layer thickness: 0.7 mm*

*Break through time: 480 min*

*Splash contact*

*Material: butyl-rubber*

*Minimum layer thickness: 0.3 mm*

*Break through time: 62 min*

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

· **Eye/face protection**

*Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).*

*Safety glasses*

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Tightly sealed goggles

- **Body protection:** Protective work clothing
- **Environmental exposure controls**  
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**SECTION 9: Physical and chemical properties**

· **9.1 Information on basic physical and chemical properties**

· **General Information**

- **Physical state** Fluid
- **Colour:** Colourless
- **Odour:** Chlorine-like
- **Odour threshold:** 84,9 - 201,5 ppm
- **Melting point/freezing point:** -63 °C
- **Boiling point or initial boiling point and boiling range** 62 °C
- **Flammability** Product is not flammable.
- **Lower and upper explosion limit**
- **Lower:** Not classified as explosive
- **Upper:** Not classified as explosive
- **Flash point:** does not flash
- **Auto-ignition temperature:** 982 °C
- **Decomposition temperature:** Distillable in an undecomposed state at normal pressure.
- **pH** No data available
- **Viscosity:**
- **Dynamic at 20 °C:** 0.56 mPas
- **Solubility**
- **water at 20 °C:** 8 g/l
- **Partition coefficient n-octanol/water (log value)** 2
- **Vapour pressure at 20 °C:** 210 hPa
- **Density and/or relative density**
- **Density at 20 °C:** 1.48 g/cm<sup>3</sup>
- **Relative density** 1.492 at 25 °C
- **Vapour density** 4,86 kg/m<sup>3</sup> , at 20 °C

· **9.2 Other information**

- **Appearance:**
- **Form:** Fluid
- **Important information on protection of health and environment, and on safety.**
- **Ignition temperature:** Product is not selfigniting.

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· <b>Explosive properties:</b>	Product does not present an explosion hazard.
· <b>Molecular weight</b>	119 g/mol
· <b>Change in condition</b>	
· <b>Softening point/range</b>	
· <b>Oxidising properties</b>	Non oxidizer.
· <b>Evaporation rate</b>	No data available

<b>· Information with regard to physical hazard classes</b>	
· <b>Explosives</b>	Void
· <b>Flammable gases</b>	Void
· <b>Aerosols</b>	Void
· <b>Oxidising gases</b>	Void
· <b>Gases under pressure</b>	Void
· <b>Flammable liquids</b>	Void
· <b>Flammable solids</b>	Void
· <b>Self-reactive substances and mixtures</b>	Void
· <b>Pyrophoric liquids</b>	Void
· <b>Pyrophoric solids</b>	Void
· <b>Self-heating substances and mixtures</b>	Void
· <b>Substances and mixtures, which emit flammable gases in contact with water</b>	Void
· <b>Oxidising liquids</b>	Void
· <b>Oxidising solids</b>	Void
· <b>Organic peroxides</b>	Void
· <b>Corrosive to metals</b>	Void
· <b>Desensitised explosives</b>	Void
· <b>Molecular Weight</b>	119.38
· <b>Molecular Formula</b>	CHCl3

**SECTION 10: Stability and reactivity**

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

**SECTION 11: Toxicological information**

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity**  
Harmful if swallowed.  
Toxic if inhaled.

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

Oral	LD50	908 mg/kg (rat)
Dermal	LD50	75 mg/kg (rat)
Inhalative	LC50/4 h	3 mg/l (ATE)

- **Skin corrosion/irritation** Causes skin irritation.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Suspected of causing cancer.
- **Reproductive toxicity** Suspected of damaging the unborn child.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure**  
Causes damage to the central nervous system, the kidneys, the liver and the respiratory system through prolonged or repeated exposure.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **11.2 Information on other hazards**
- **Endocrine disrupting properties** Substance is not listed.

**SECTION 12: Ecological information**

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**  
The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Additional ecological information:**
- **General notes:**  
Water hazard class 3 (German Regulation) (Assessment by list): extremely hazardous for water  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.

**SECTION 13: Disposal considerations**

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

**· European waste catalogue**

HP4	Irritant - skin irritation and eye damage
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HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP6	Acute Toxicity
HP7	Carcinogenic
HP10	Toxic for reproduction

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

**SECTION 14: Transport information**

<ul style="list-style-type: none"> <li>· 14.1 UN number or ID number</li> <li>· ADR, IMDG, IATA</li> </ul>	<p align="center">UN1888</p>
<ul style="list-style-type: none"> <li>· 14.2 UN proper shipping name</li> <li>· ADR</li> <li>· IMDG, IATA</li> </ul>	<p align="center">UN1888 CHLOROFORM CHLOROFORM</p>
<ul style="list-style-type: none"> <li>· 14.3 Transport hazard class(es)</li> <li>· ADR</li> </ul>	<div style="text-align: center;">  </div> <p>· Class 6.1 (T1) Toxic substances. · Label 6.1</p>
<ul style="list-style-type: none"> <li>· IMDG, IATA</li> </ul>	<div style="text-align: center;">  </div> <p>· Class 6.1 Toxic substances. · Label 6.1</p>
<ul style="list-style-type: none"> <li>· 14.4 Packing group</li> <li>· ADR, IMDG, IATA</li> </ul>	<p align="center">III</p>
<ul style="list-style-type: none"> <li>· 14.5 Environmental hazards:</li> <li>· Marine pollutant:</li> </ul>	<p align="center">No</p>
<ul style="list-style-type: none"> <li>· 14.6 Special precautions for user</li> <li>· Hazard identification number (Kemler code):</li> <li>· EMS Number:</li> <li>· Segregation groups</li> <li>· Stowage Category</li> </ul>	<p>Warning: Toxic substances. 60 F-A,S-A Liquid halogenated hydrocarbons A</p>

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· <b>Stowage Code</b>	SW2 Clear of living quarters.
· <b>14.7 Maritime transport in bulk according to IMO instruments</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADR</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>Transport category</b>	2
· <b>Tunnel restriction code</b>	E
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	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**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **Seveso category H2 ACUTE TOXIC**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 32
- **Regulation (EU) No 649/2012 Annex I Part 1**
- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**  
Substance is not listed.
- **REGULATION (EU) 2019/1148**
- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**  
Substance is not listed.
- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS** Substance is not listed.
- **Regulation (EC) No 273/2004 on drug precursors** Substance is not listed.
- **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**  
Substance is not listed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

EU

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**SECTION 16: Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing SDS:** Product safety department

· **Contact:**

Austria German Vergiftungsinformationszentrale 01 406 43 43 <http://www.goeg.at/de/VIZ>

Belgium French Centre antipoison 070 245 245 <http://www.centreantipoisons.be>

Dutch Antigif centrum 070 245 245 <http://www.antigifcentrum.be>

German Giftinformationszentrum 070 245 245 <http://www.poisoncentre.be>

Bulgaria\* Bulgarian Токсикологични центрове 02 9154 411 <https://pirogov.eu/bg>

Croatia\* Croatian Centar za kontrolu otrovanja +385 1 2348 342 <https://www.imi.hr/en/jedinica/poison-control-centre>

Czech Rep Czech Toxikologické informační středisko +420 224 91 92 93; +420 224 91 54 02 <http://www.tis-cz.cz>

Denmark Danish Giftlinien +45 8212 1212 <https://www.bispebjerghospital.dk/giftlinien>

Estonia Estonian Mürgistusteabekeskus 16662; +372 7943 794 <https://www.16662.ee>

Finland Finnish Myrkytystietokeskus 0800 147 111; +358 9 471 977 <http://www.hus.fi/sairaanhoito/sairaanhoitopalvelut/myrkytystietokeskus/Sivut/default.aspx>

France French Angers +33 2 41 48 21 21 <http://www.centres-antipoison.net/angers/index.html>

Bordeaux +33 5 56 96 40 80 <http://www.centres-antipoison.net/bordeaux/index.html>

Lille +33 0800 59 59 59 <http://www.centres-antipoison.net/lille/index.html>

Lyon +33 4 72 11 69 11 <http://www.centres-antipoison.net/lyon/index.html>

Marseille +33 4 91 75 25 25 <http://www.centres-antipoison.net/marseille/index.html>

Nancy +33 3 83 22 50 50 <http://www.centres-antipoison.net/nancy/index.html>

Paris +33 1 40 05 48 48 <http://www.centres-antipoison.net/paris/index.html>

Strasbourg +33 3 88 37 37 37 <http://www.centres-antipoison.net/strasbourg/index.html>

Toulouse +33 5 61 77 74 47 <http://www.centres-antipoison.net/toulouse/index.html>

Germany German Berlin +49 30 19240 <https://giftnotruf.charite.de>

Bonn +49 228 19240 <http://www.gizbonn.de/index.php?id=272>

Erfurt +49 361 730730 <https://www.ggiz-erfurt.de/home.html>

Freiburg +49 761 19240 <https://www.uniklinik-freiburg.de/giftberatung.html>

Göttingen +49 551 19240 <https://www.giz-nord.de/cms/index.php>

Homburg/Saar +49 6841 19240 [http://www.uniklinikumsaarland.de/de/einrichtungen/kliniken\\_institute/kinder\\_und\\_jugendmedizin/informations\\_und\\_behandlungszentrum\\_fuer\\_vergiftungen\\_des\\_saarlandes](http://www.uniklinikumsaarland.de/de/einrichtungen/kliniken_institute/kinder_und_jugendmedizin/informations_und_behandlungszentrum_fuer_vergiftungen_des_saarlandes)

Mainz +49 6131 19240 <http://www.giftinfo.uni-mainz.de/index.php?id=24807>

München +49 89 19240 <http://www.toxinfo.med.tum.de>

Greece Greek κέντρο δηλητηριάσεων +30 213 200 9000 <http://www.aglaiakyriakou.gr/>; <http://0317.syzefxis.gov.gr>

Hungary Hungarian Egészségügyi Toxikológiai Tájékoztató Szolgálat +36 6 80 20 11 99; +36 06 1 476 6464 <http://www.okbi.hu/page.php?trid=1&dz=103>

Italy Italian Bergamo +39 800 88 33 00 [http://www.asst-pg23.it/section/259/Tossicologia\\_-\\_Centro\\_antiveneni](http://www.asst-pg23.it/section/259/Tossicologia_-_Centro_antiveneni)

Firenze +39 55 794 78 19 <http://www.antiveneni.altervista.org>

Milano +39 2 661 01 029 <http://www.centroantiveneni.org>

Pavia +39 382 244 44 <http://www-3.unipv.it/reumatologia-tossicologia/cav>

Napoli +39 81 747 28 70

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Roma +39 6 685 93 726 / +39 6 499 78 000 / +39 6 305 43 43 <http://www.corso-primi-soccorso-roma.it/centri/antiveleno-lazio.html>Ireland English Poisons information Centre of Ireland +353 1 809 21 66 <http://www.poisons.ie/Public>Latvia\* Latvian Saindēšanās informācijas centri +371 670 00 610 <https://www.aslimnica.lv/lv>Russian Латвия +371 67000610 <https://www.aslimnica.lv/lv>Lithuania Lithuanian Apsinuodijimų informacijos biuras + 370 5 236 20 52 <http://www.apsinuodijau.lt>Luxembourg German Giftinformationszentrum +49 800 255 00 <http://www.poissoncentre.be>French Centre antipoison +352 800 255 00 <http://www.centreatipoisons.be>Netherlands Dutch 31 (0)88 755 8 <https://www.productnotificatie.nl>Norway Norwegian Giftinformasjonen +47 22 59 13 00 <https://helsenorge.no/Giftinformasjon>Poland Polish Kraków +48 12 411 99 99 <http://www.oit.cm.uj.edu.pl>Gdansk +48 58 682 04 04 <http://www.pctox.pl/news.php>Poznań +48 61 847 69 46 <http://www.raszeja.poznan.pl/oddzialy/oddzialtoksykologiczny>Warszawa +48 607 218 174 [okzit@burdpi.pol.pl](mailto:okzit@burdpi.pol.pl)Portugal Portuguese Centro de Informação Antivenenos +351 808 250 143 <http://www.inem.pt>Romania Romanian CNMRMC +40 213 183 606 [infotox@insp.gov.ro](mailto:infotox@insp.gov.ro)

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

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organisation

ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)

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

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*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*  
*CAS: Chemical Abstracts Service (division of the American Chemical Society)*  
*DNEL: Derived No-Effect Level (REACH)*  
*PNEC: Predicted No-Effect Concentration (REACH)*  
*LC50: Lethal concentration, 50 percent*  
*LD50: Lethal dose, 50 percent*  
*PBT: Persistent, Bioaccumulative and Toxic*  
*vPvB: very Persistent and very Bioaccumulative*  
*Acute Tox. 4: Acute toxicity – Category 4*  
*Acute Tox. 3: Acute toxicity – Category 3*  
*Skin Irrit. 2: Skin corrosion/irritation – Category 2*  
*Eye Irrit. 2: Serious eye damage/eye irritation – Category 2*  
*Carc. 2: Carcinogenicity – Category 2*  
*Repr. 2: Reproductive toxicity – Category 2*  
*STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1*

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

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**Annex: Exposure scenario**

· **Short title of the exposure scenario**

· **Sector of Use**

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU9 Manufacture of fine chemicals

SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

SU24 Scientific research and development

· **Product category**

PC19 Intermediate

PC21 Laboratory chemicals

PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents

PC29 Pharmaceuticals

PC40 Extraction agents

· **Process category**

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC15 Use as laboratory reagent

· **Environmental release category**

ERC1 Manufacture of the substance

ERC6a Use of intermediate

ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)

· **Description of the activities / processes covered in the Exposure Scenario**

See section 1 of the annex to the Safety Data Sheet.

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1. Industrial use Reagent for analysis)

*Sectors of end-use*

SU 3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU9 Manufacture of fine chemicals

SU 10 Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)

*Chemical product category*

PC19 Intermediate

PC21 Laboratory chemicals

*Process categories*

PROC1 Use in closed process, no likelihood of exposure

PROC2 Use in closed, continuous process with occasional controlled exposure

PROC3 Use in closed batch process (synthesis or formulation)

PROC8a Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities

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*PROC8b Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities*

*PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)*

*PROC15 Use as laboratory reagent*

*Environmental Release Categories*

*ERC1 Manufacture of substances*

*ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)*

*2. Professional use Reagent for analysis)*

*Sectors of end-use*

*SU 22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)*

*Chemical product category*

*PC21 Laboratory chemicals*

*Process categories*

*PROC15 Use as laboratory reagent*

*Environmental Release Categories*

*ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)*

*ERC8a Wide dispersive indoor use of processing aids in open systems*

· **Conditions of use**

· **Duration and frequency** Frequency of use:

· **Worker**

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*Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC9, PROC15*

*Product characteristics*

*Concentration of the Substance in Mixture/Article 100 %* Covers the percentage of the substance in the product up to 100 %

*Physical Form (at time of use) High volatile liquid*

*Frequency and duration of use*

*Frequency of use 8 hours/day*

*Other operational conditions affecting workers exposure*

*Outdoor / Indoor Indoor with local exhaust ventilation (LEV)*

*Outdoor / Indoor Outdoor*

*Technical conditions and measures*

*Provide extraction ventilation at points where emissions occur.*

*Organisational measures to prevent /limit releases, dispersion and exposure Covers daily exposures up to 8 hours.*

*Conditions and measures related to personal protection, hygiene and health evaluation*

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*Wear suitable gloves (tested to EN374), coverall and eye protection. Wear respiratory protection.*

**Environment**

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*Contributing scenario controlling environmental exposure for: ERC1*

*Amount used*

*Daily amount per site (Msafe) 829.589 kg*

*Environment factors not influenced by risk management*

*Dilution Factor (River) 10*

*Dilution Factor (Coastal Areas) 100*

*Other given operational conditions affecting environmental exposure*

*Number of emission days per year 365*

*Emission or Release Factor: Air 0,07 %*

*Emission or Release Factor: Water 0,006 %*

*Conditions and measures related to municipal sewage treatment plant*

*Type of Sewage Treatment Plant Municipal sewage treatment plant Flow rate of sewage treatment 10.000 m<sup>3</sup>/d plant effluent*

*Percentage removed from waste 85,6 % water*

*Sludge Treatment Sewage sludge should not be applied to natural soils.*

*Conditions and measures related to external treatment of waste for disposal*

*Disposal methods All liquid and solid waste should be incinerated.*

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*Contributing scenario controlling environmental exposure for: ERC6a*

*Amount used*

*Daily amount per site (Msafe) 4.800 kg*

*Environment factors not influenced by risk management*

*Dilution Factor (River) 10*

*Dilution Factor (Coastal Areas) 100*

*Other given operational conditions affecting environmental exposure*

*Number of emission days per year 300*

*Emission or Release Factor: Air 0,5 %*

*Emission or Release Factor: Water 0,7 %*

*Conditions and measures related to municipal sewage treatment plant*

*Type of Sewage Treatment Plant Municipal sewage treatment plant Flow rate of sewage treatment 10.000 m<sup>3</sup>/d plant effluent*

*Percentage removed from waste 85,6 % water*

*Sludge Treatment Sewage sludge should not be applied to natural soils.*

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*Conditions and measures related to external treatment of waste for disposal*

*Disposal methods All liquid and solid waste should be incinerated.*

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*Contributing scenario controlling environmental exposure for: ERC8b*

*Amount used*

*Daily amount per site (M<sub>safe</sub>) 5 kg*

*Environment factors not influenced by risk management*

*Dilution Factor (River) 10*

*Dilution Factor (Coastal Areas) 100*

*Other given operational conditions affecting environmental exposure*

*Number of emission days per year 365*

*Conditions and measures related to municipal sewage treatment plant*

*Type of Sewage Treatment Plant none*

*Conditions and measures related to external treatment of waste for disposal*

*Disposal methods All liquid and solid waste should be incinerated.*

· **Physical parameters** See section 9 to the Safety Data Sheet.

· **Physical state** Fluid

· **Concentration of the substance in the mixture**

Raw material.

Covers the percentage of the substance in the product up to 100 %.

· **Used amount per time or activity**

According to directions for use.

Covers the percentage of the substance in the product up to 100 %

· **Other operational conditions** Observe the general safety regulations when handling chemicals.

· **Other operational conditions affecting environmental exposure**

Observe section 6 of the Safety Data Sheet (Accidental release measures).

· **Other operational conditions affecting worker exposure**

Avoid contact with the skin.

Avoid contact with eyes.

Do not breathe gas/vapour/aerosol.

Do not breathe gas/fume/vapour/aerosol.

Gloves required during a shift

Always wear safety goggles during mechanical processing (grinding, sawing /cutting, drilling, milling).

· **Risk management measures**

· **Worker protection** Observe section 7.1 and 8.1-8.2 of the Safety Data Sheet

· **Organisational protective measures**

Deploy only trained chemical workers.

Avoid contact with drinking water and / or food during application.

Ensure that activities are executed by specialists or authorised personnel only.

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Ensure that the working area is organised, well lit and ventilated, with enough space to handle spilled product.

Ensure good ventilation. This can be achieved by using a local exhaust or general exhaust system. If these measures are insufficient to keep the solvent vapour concentration below the workplace limit, wear an adequate respiratory protective device.

Consider section 4 of the Safety Data Sheet (First aid measures).

· **Technical protective measures**

Ensure that suitable extractors are available on processing machines

Ensure good ventilation/exhaustion at the workplace.

Store in cool, dry place in tightly closed receptacles.

· **Personal protective measures**

Do not inhale gases / fumes / aerosols.

Avoid contact with the skin.

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

For personal protection see section 8.

Wash hands before eating, drinking or smoking.

Do not eat or drink while working.

Protective work clothing

Avoid contact with the eyes.

Pregnant women should strictly avoid inhalation or skin contact.

Tightly sealed goggles

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Environmental protection measures**

· **Air** Exhaust air is introduced into the gas scrubber.

· **Water** Do not allow to reach ground water, water bodies or sewage system.

· **Soil** Prevent contamination of soil.

· **Notes** In case of unintended release of the product: See section 6 of the Safety Data Sheet.

· **Disposal measures**

Disposal must be made according to official regulations.

Ensure that waste is collected and contained.

· **Disposal procedures**

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

· **Waste type** Partially emptied and uncleaned packaging

· **Exposure estimation**

· **Worker (dermal)**

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Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC9, PROC15

Exposure duration, route, effect: longterm, combined, systemic

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**· Environment**

*A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterization is not necessary (REACH Annex I section 5.0).*

**· Consumer** Not relevant for this Exposure Scenario.

**· Guidance for downstream users**

*Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).*

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