

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

revised on: 03.01.2023

Version number 5 (replaces version 4)

Creation Date: 13.03.2017

SECTION 1: Identification of the substance/mixture and of the company/undertaking· **1.1 Product identifier**· **Trade name: 1-Butanol**· **Article number:** 2513· **CAS Number:**

71-36-3

· **EC number:**

200-751-6

· **Index number:**

603-004-00-6

· **Registration number** 01-2119484630-38-XXXX· **1.2 Relevant identified uses of the substance or mixture and uses advised against**· **Life cycle stages**

IS Use at industrial Sites

F Formulation or re-packing

· **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)

SU24 Scientific research and development

· **Product category**

PC19 Intermediate

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

PC21 Laboratory chemicals

PC29 Pharmaceuticals

PC39 Cosmetics, personal care products

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

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

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

ERC2 Formulation into mixture

ERC3 Formulation into solid matrix

ERC6a Use of intermediate

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

Industrial use

Laboratory chemicals

Reagent for analysis

· **1.3 Details of the supplier of the safety data sheet**· **Manufacturer/Supplier:**

Th. Geyer GmbH & Co. KG

Dornierstr. 4 – 6

D-71272 Renningen

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Tel.: +49(0)7159-1637-0, Fax:+49 (0)7159/18417

www.thgeyer.de

sicherheitsdatenblaetter@thgeyer.de

· **Further information obtainable from:** Product management department· **1.4 Emergency telephone number:**

National Poisons Information Service

City Hospital

Dudley Road

Birmingham B18 7QH

Tel.:Emergency: (00 44) 87 06 00 62 66

Members of the public seeking specific information on poisons should contact:

In England and Wales: NHS 111 - dial 111

In Scotland: NHS 24 - dial 111

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.



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 3 H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

· **2.2 Label elements**· **Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the GB CLP regulation.

· **Hazard pictograms**

GHS02 GHS05 GHS07

· **Signal word** Danger· **Hazard statements**

H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

· **Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P243 Take action to prevent static discharges.

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- P261 Avoid breathing 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.
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P403+P235 Store in a well-ventilated place. Keep cool.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **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: 71-36-3 1-Butanol

- **Identification number(s)**

- **EC number:** 200-751-6

- **Index number:** 603-004-00-6

SECTION 4: First aid measures

- **4.1 Description of first aid measures**

- **General information:**

First aider needs to protect himself.

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.

- **After inhalation:**

Remove person from danger area.

Supply fresh air.

Seek medical treatment.

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

- **After skin contact:**

Flush contaminated skin with soap and plenty of water.

After prolonged contact or any signs of skin changes (redness or other signs of inflammation) seek medical attention.

take care of a Possiblility of inhalation at the same time

- **After eye contact:**

Remove contact lenses

Protect unharmed eye.

Rinse opened eye for several minutes under running water. Then consult a doctor.

- **After swallowing:**

Rinse mouth thoroughly with water.

Make vicitim drink water (two glasses at most).

A person vomiting while laying on their back should be turned onto their side.

Consult a physician.

- **Information for doctor:** Please observe safety data sheet/label.

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

Cramp

Gastric or intestinal disorders

Vertigo

Breathing difficulty

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Headache

Hazards

Risk of organ damage (liver, kidney)

Danger of circulatory collapse.

Danger of impaired breathing.

4.3 Indication of any immediate medical attention and special treatment needed

Give Glucocorticoid-Aerosol in case of lung irritation.

Later observation for pneumonia and pulmonary oedema.

Monitor circulation.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing agents:**

Water spray, powder, carbon dioxide or foam. Fight larger fires with water spray or alcohol resistant foam.

For safety reasons unsuitable extinguishing agents: Water with full jet.**5.2 Special hazards arising from the substance or mixture**

Combustible.

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

5.3 Advice for firefighters**Protective equipment:**

Wear fully protective suit.

Wear self-contained respiratory protective device.

Do not inhale explosion gases or combustion gases.

Additional information

Cool endangered receptacles with water spray.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Keep away from ignition sources.

Avoid contact with eyes and skin.

Ensure adequate ventilation.

Particular danger of slipping on leaked/spilled product.

Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions: Do not allow to enter sewers/surface or ground water.**6.3 Methods and material for containment and cleaning up:**

Cover drains.

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

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Dispose of the material collected according to regulations.

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.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Keep receptacles tightly sealed.

Store in cool, dry place in tightly closed receptacles.

Keep away from heat and direct sunlight.

Apply the general protection and hygiene measures for the handling with chemicals.

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- **Information about fire - and explosion protection:**
Traces of flammable substances may collect in the steam chamber of enclosed systems. Keep clear of ignition sources.
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Provide solvent resistant, sealed floor.
Prevent any seepage into the ground.
Store only in the original receptacle.
- **Information about storage in one common storage facility:** Store away from oxidising agents.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Storage class:** 3
- **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: 71-36-3 1-Butanol

WEL	Short-term value: 154 mg/m ³ , 50 ppm
Sk	

- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Appropriate engineering controls** No further data; see item 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
Wash hands before breaks and at the end of work.
Avoid contact with the skin.
Avoid contact with the eyes and skin.
- **Respiratory protection:**
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. If air-purifying respiratory protection is required according to the risk assessment, wear a respirator with full-face mask with combination filter (US) or with filter type ABEK (EN 14387) filter cartridge. If the respirator is the only protective measure, an ambient air self-contained breathing apparatus with a full face mask must be worn. Respirators and components must be approved to appropriate government standards (for example, NIOSH (US) or CEN (EU)). Translated with www.DeepL.com/Translator (free version)
- **Hand protection**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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

· **Material of gloves**

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.

Butyl rubber, BR

Material thickness: 0.5 mm

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- **Penetration time of glove material**

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

level 6 for application > 480 min

- **Eye/face protection**



Tightly sealed goggles

- **Body protection:**



Protective work clothing (e. g. safety shoes EN ISO 20345, long-sleeved protective working garments).

SECTION 9: Physical and chemical properties

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

- **General Information**

· Physical state	Fluid
· Colour:	Colourless
· Odour:	Alcohol-like
· Melting point/freezing point:	-89 °C
· Boiling point or initial boiling point and boiling range	116–118 °C
· Flammability	Flammable.
· Lower and upper explosion limit	
· Lower:	1.5 Vol %
· Upper:	11.3 Vol %
· Flash point:	35 °C
· Ignition temperature:	340 °C
· Decomposition temperature:	Not determined.
· pH	7
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic at 20 °C:	2.95 mPas
· Solubility	
· water at 20 °C:	77 g/l
· Partition coefficient n-octanol/water (log value)	-0.07572071
· Vapour pressure at 20 °C:	6.7 hPa
· Density and/or relative density	
· Density at 20 °C:	0.81 g/cm ³
	Not determined.
· Relative density	Not determined.
· Vapour density	Not determined.

- **9.2 Other information**

- **Appearance:**

· **Form:** Fluid

- **Important information on protection of health and environment, and on safety.**

· **Auto-ignition temperature:** Not determined.

· **Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· **Molecular weight** 74.12 g/mol

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· Change in condition	
· Evaporation rate	Not determined.
· Information with regard to physical hazard classes	
· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Flammable liquid and vapour.
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	Void
· Desensitised explosives	Void

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability** Stable with proper storage and handling.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
 Reacts with oxidising agents.
 Reacts with light metals.
 Forms explosive gas mixture with air.
- **10.4 Conditions to avoid**
 Vapours form explosive mixtures with air.
 Heat, flames and sparks
- **10.5 Incompatible materials:** Avoid contact with other chemicals.
- **10.6 Hazardous decomposition products:** On fire: see chapter 5

SECTION 11: Toxicological information

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

· LD/LC50 values relevant for classification:

Oral	LD50	790 mg/kg (rat)
Dermal	LD50	3,400 mg/kg (rabbit)
Inhalative	LC50	8,000 mg/l (rat)

- **Skin corrosion/irritation** Causes skin irritation.
- **Serious eye damage/irritation** Causes serious eye damage.
- **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** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** May cause respiratory irritation. May cause drowsiness or dizziness.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.

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- **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 1 (German Regulation) (Assessment by list): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
Observe local (country-specific) regulations and laws
This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
Chemicals must be disposed of in compliance with the respective national regulations.

· European waste catalogue

14 00 00	WASTE ORGANIC SOLVENTS, REFRIGERANTS AND PROPELLANTS (EXCEPT 07 AND 08)
14 06 00	waste organic solvents, refrigerants and foam/aerosol propellants
14 06 03*	other solvents and solvent mixtures
HP3	Flammable
HP4	Irritant - skin irritation and eye damage
HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP6	Acute Toxicity

- **Uncleaned packaging:**
- **Recommendation:**
Packaging may be reused or recycled after cleaning.
Non contaminated packagings may be reused.
Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

SECTION 14: Transport information

- **14.1 UN number or ID number**
- **ADR, IMDG, IATA** UN1120
- **14.2 UN proper shipping name**
- **ADR** 1120 BUTANOLS

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· IMDG, IATA	BUTANOLS
· 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.
· Hazard identification number (Kemler code):	30
· EMS Number:	F-E,S-D
· 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
· UN "Model Regulation":	UN 1120 BUTANOLS, 3, III

SECTION 15: Regulatory information

· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

· Inventory of Hazardous Chemicals

CAS: 71-36-3 | 1-Butanol

· Directive 2012/18/EU

· Named dangerous substances - ANNEX I Substance is not listed.

· Seveso category P5c FLAMMABLE LIQUIDS

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- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 40
- **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.
- **National regulations:**
- **Information about limitation of use:**
Employment restrictions concerning juveniles must be observed.
Employment restrictions concerning pregnant and lactating women must be observed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

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.
Application, use and handling of our products take place out of our control and are solely your responsibility.

- **Department issuing SDS:** Product management
- **Contact:** Product management
- **Version number of previous version:** 4
- **Abbreviations and acronyms:**
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
- *** Data compared to the previous version altered.**

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Annex: Exposure scenario

- **Short title of the exposure scenario** Chemicals for Laboratory and industrial use
- **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)
 - SU24 Scientific research and development
- **Product category**
 - PC19 Intermediate
 - PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
 - PC21 Laboratory chemicals
 - PC29 Pharmaceuticals
 - PC39 Cosmetics, personal care products
 - 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
 - PROC4 Chemical production where opportunity for exposure arises
 - PROC5 Mixing or blending in batch processes
 - 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
 - ERC2 Formulation into mixture
 - ERC3 Formulation into solid matrix
 - ERC6a Use of intermediate
- **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use** Customary application according to section 1.
- **Duration and frequency**
 - 8hrs (full working shift).
 - 5 workdays/week.
- **Worker** 8hrs (full working shift).
- **Environment** The product must not enter the sewage system or the aquatic environment.
- **Physical parameters**
- **Physical state** Fluid
- **Concentration of the substance in the mixture** Raw material.
- **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 eyes.
 - Avoid contact with the skin.
 - Do not breathe gas/vapour/aerosol.
- **Other operational conditions affecting consumer exposure** Keep out of the reach of children.
- **Other operational conditions affecting consumer exposure during the use of the product** Not applicable.
- **Risk management measures**
- **Worker protection**
- **Organisational protective measures**
 - Employment restrictions concerning juveniles must be observed.
 - Employment restrictions concerning pregnant and lactating women must be observed.
 - Consider section 4 of the Safety Data Sheet (First aid measures).
- **Technical protective measures** Ensure that suitable extractors are available on processing machines

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- **Personal protective measures**

Do not inhale gases / fumes / aerosols.

Avoid contact with the skin.

Avoid contact with the eyes.

Tightly sealed goggles

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. If air-purifying respiratory protection is required according to the risk assessment, wear a respirator with full-face mask with combination filter (US) or with filter type ABEK (EN 14387) filter cartridge. If the respirator is the only protective measure, an ambient air self-contained breathing apparatus with a full face mask must be worn. Respirators and components must be approved to appropriate government standards (for example, NIOSH (US) or CEN (EU)). Translated with www.DeepL.com/Translator (free version)

Protective gloves

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

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

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

- **Measures for consumer protection**

Ensure adequate labelling.

Keep locked up and out of the reach of children.

- **Environmental protection measures**

Avoid release to the environment. Obtain special instructions / refer to Safety Data Sheet.

- **Water** Do not allow to reach ground water, water bodies or sewage system, not even in small quantities.

- **Soil** Prevent contamination of soil.

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

- **Disposal measures** 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 (oral)** Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

- **Worker (dermal)** Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

- **Worker (inhalation)** Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

- **Environment**

Detailed information on the estimation of the environmental exposure can be found at <http://ecb.jrc.ec.europa.eu/euses/>.

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

- **Guidance for downstream users** For the risk assessment, the tools recommended by ECHA can be used.

E