

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 07.05.2021

Version number 7

Revision: 07.05.2021

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

- **1.1 Product identifier**
- **Trade name: SHERAPOLAN 2:1 (Component A)**
- **Article number:** 516010, 516011, 516017
- **1.2 Relevant identified uses of the substance or mixture and uses advised against:**
No further relevant information available.
- **Application of the substance / the mixture:**
Component A (polyol) for the production of model resin based on polyurethane
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
SHERA Werkstoff-Technologie GmbH & Co. KG
Espohlstraße 53
D-49448 Lemförde
GERMANY
sdb@shera.de
+ 49 (0) 54 43 – 99 33 – 0
- **Further information obtainable from:** Department of product security.
- **1.4 Emergency telephone number:**
Gif tinformationszentrum-Nord +49 (0) 551-19240
(Information in german or english)

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008:**
Eye Irrit. 2 H319 Causes serious eye irritation.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008:**
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms:**



GHS07

- **Signal word:** Warning
- **Hazard statements:**
H319 Causes serious eye irritation.
- **Precautionary statements:**
P280 Wear protective gloves / eye protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment:**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

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· Dangerous components:		
CAS: 14808-60-7 EINECS: 238-878-4	Quartz (SiO ₂) substance with a Community workplace exposure limit	25-<100%
CAS: 102-60-3 EINECS: 203-041-4 Reg.nr.: 01-2119552434-41	1,1',1",1'''-ethylenedinitrilotetrapropan-2-ol Eye Irrit. 2, H319	10-25%
CAS: 6846-50-0 Reg.nr.: 01-2119451093-47	2,2,4-trimethyl-1,3-pentanediol diisobutyrate Aquatic Chronic 3, H412	≥10-<25%
CAS: 25322-69-4 Reg.nr.: 01-2119457556-29	Polypropylene glycol Acute Tox. 4, H302	5-15%
CAS: 7727-43-7 EINECS: 231-784-4	barium sulphate, natural substance with a Community workplace exposure limit	1-10%

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

SECTION 4: First aid measures

· 4.1 Description of first aid measures

· **After inhalation:**

Supply fresh air; consult doctor in case of complaints.

No special measures required.

· **After skin contact:** If skin irritation continues, consult a doctor.

· **After eye contact:**

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

· **After swallowing:** If symptoms persist consult doctor.

· 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:**

CO₂, powder or water spray. Fight larger fire with alcohol resistant foam.

Use fire extinguishing methods suitable to surrounding conditions.

· 5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Carbon monoxide (CO).

Carbon dioxide (CO₂).

· 5.3 Advice for firefighters

· **Protective equipment:** Wear self-contained respiratory protective device.

· **Additional information**

Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures** Ensure adequate ventilation.

· **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).

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.

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See Section 13 for disposal information.

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Ensure good ventilation / exhaustion at the workplace.
Prevent formation of aerosols.

· **Information about fire - and explosion protection:** No special measures required.

7.2 Conditions for safe storage, including any incompatibilities

Storage

Requirements to be met by storerooms and receptacles:

Keep container in a well-ventilated and dry place.

Keep container tightly closed.

Storage temperature: 20 up to 25°C.

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

Further information about storage conditions:

Store in dry conditions.

Protect from frost.

Keep container tightly sealed.

· **Storage class:** No information available.

· **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:

14808-60-7 Quartz (SiO₂)

MAK (Germany)	Alveolar fraction
BOELV (EU)	Long-term value: 0.1* mg/m ³ *respirable fraction

7727-43-7 barium sulphate, natural

WEL (Great Britain)	Long-term value: 10* 4** mg/m ³ *inhalable dust **respirable dust
AGW (Germany)	Long-term value: 1.25* 10** mg/m ³ 2(II);*alveolar**respirable; AGS, DFG

DNELs:

102-60-3 1,1',1'',1'''-ethylenedinitrotetrapropan-2-ol

Dermal	DNEL Worker - Long Term - Systemic effects	4.2 mg/kg (workers)
Inhalative	DNEL Worker - Long Term - Systemic effects	29.4 mg/m ³ (workers)

· **PNECs:** No data available.

· **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:

The usual precautionary measures are to be adhered to when handling chemicals.

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 eyes.

Avoid contact with the eyes and skin.

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- **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.

- **Hand protection**

The glove material has to be impermeable and resistant to the product. Due to missing tests no recommendation to the glove material can be given for the product. 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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **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.

- **Eye/face protection**



Tightly sealed goggles

- **Body protection:** Protective work clothing.

SECTION 9: Physical and chemical properties

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

- **General Information**

- **Physical state**

Fluid

- **Colour:**

Whitish

- **Odour:**

characteristic

- **Melting point/freezing point:**

Undetermined.

- **Boiling point or initial boiling point and boiling range**

Undetermined.

- **Flammability**

Not applicable.

- **Lower and upper explosion limit**

- **Lower:**

Not determined.

- **Upper:**

Not determined.

- **Flash point:**

>100 °C

- **Auto-ignition temperature:**

Product is not selfigniting.

- **Decomposition temperature:**

Not determined.

- **pH**

Not determined.

- **Viscosity:**

Not determined.

- **Kinematic viscosity**

Not determined.

- **Dynamic:**

Not determined.

- **Solubility**

- **water:**

Not miscible or difficult to mix.

- **Partition coefficient n-octanol/water (log value)**

Not determined.

- **Vapour pressure:**

Not determined.

- **Density and/or relative density**

- **Density:**

Not determined.

- **Relative density**

Not determined.

- **Vapour density**

Not determined.

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Trade name: SHERAPOLAN 2:1 (Component A)

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- **9.2 Other information**
- **Appearance:**
- **Form:** Fluid
- **Important information on protection of health and environment, and on safety.**
- **Ignition temperature:** 290 °C
- **Explosive properties:** Product does not present an explosion hazard.
- **Solvent content:**
- **VOC (EC):** 5,60 %
- **Solids content:** 0.0 %
- **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** Void.
- **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 data available.
- **10.2 Chemical stability** No decomposition if used according to specifications.
- **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** Water, alcohols, amines, bases and acids.
- **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:** No data available.

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

102-60-3 1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol

Oral	LD50	>2,000 mg/kg (Rat) (OECD 401)
	LC50	2,050 mg/kg (Rat)
Dermal	LD50	>2,000 mg/kg (Rat) (OECD 402)

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Trade name: SHERAPOLAN 2:1 (Component A)

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25322-69-4 Polypropylene glycol

Oral	LD50	2,000 mg/kg (Rat)
	LC50	1,000-<2,000 mg/kg (Rat)
Dermal	LD50	>10,000 mg/kg (rab)
		>10,000 mg/kg (Rabbit)

- **Skin corrosion/irritation** Slightly irritating (OECD method 404), does not require labeling.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **11.2 Information on other hazards**

· **Endocrine disrupting properties**

None of the ingredients is listed.

SECTION 12: Ecological information· **12.1 Toxicity**· **Aquatic toxicity:****102-60-3 1,1',1",1"'-ethylenedinitrilotetrapropan-2-ol**

EC50/48 h	>100 mg/l (Daphnia (Daphnia magna))
IC50/72 h	150.67 mg/l (Algae)
LC50/96 h	>2,000 mg/l (Fish)

25322-69-4 Polypropylene glycol

EC50/48 h	>100 mg/l (Daphnia (Daphnia magna))
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- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:** Elimination by adsorption to activated sludge.
- **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) (Self-assessment): 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**· **Recommendation:**

Must be specially treated adhering to official regulations.
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **Waste disposal key:**

The waste disposal code as prescribed in the European Waste Catalogue (EWC) depends on the waste producer and can thus vary for a product. The waste disposal code should thus be obtained separately from the waste producer in each case.

· **Uncleaned packaging:**

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

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SECTION 14: Transport information

· 14.1 UN number or ID number · ADR, ADN, IMDG, IATA	Void.
· 14.2 UN proper shipping name · ADR, ADN, IMDG, IATA	Void.
· 14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA · Class	Void.
· 14.4 Packing group · ADR, IMDG, IATA	Void.
· 14.5 Environmental hazards: · Marine pollutant:	No.
· 14.6 Special precautions for user	Not applicable.
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· UN "Model Regulation":	Void.

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** None of the ingredients is 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 not been carried out.

SECTION 16: Other information

This information is based on the state of knowledge and experience pertaining on the date of issue. The information is not to be taken as a guarantee of product properties and do not constitute the basis for a contractual legal relationship. The details must not be changed or transferred to other products. Duplication in an unchanged state is permissible.

- **Relevant phrases**
H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H412 Harmful to aquatic life with long lasting effects.
- **Department issuing SDS:** Department of product security.
- **Abbreviations and acronyms:**
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
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)
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

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ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
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
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

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

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

- **1.1 Product identifier**
- **Trade name: SHERAPOLAN 2:1 (Component B)**
- **Article number:** 516010, 516011, 516017
- **1.2 Relevant identified uses of the substance or mixture and uses advised against:**
No further relevant information available.
- **Application of the substance / the mixture:**
Component B (hardener) for the production of model resin based on polyurethane
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
SHERA Werkstoff-Technologie GmbH & Co. KG
Espohlstraße 53
D-49448 Lemförde
GERMANY
sdb@shera.de
+ 49 (0) 54 43 – 99 33 – 0
- **Further information obtainable from:** Department of product security.
- **1.4 Emergency telephone number:**
Gif tinformationszentrum-Nord +49 (0) 551-19240
(Information in german or english)

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008:**

Skin Irrit. 2	H315 Causes skin irritation.
Eye Irrit. 2	H319 Causes serious eye irritation.
Resp. Sens. 1	H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Sens. 1	H317 May cause an allergic skin reaction.
Carc. 2	H351 Suspected of causing cancer.
STOT SE 3	H335 May cause respiratory irritation.
STOT RE 2	H373 May cause damage to organs through prolonged or repeated exposure.
Aquatic Chronic 1	H410 Very toxic to aquatic life with long lasting effects.

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



GHS07 GHS08 GHS09

- **Signal word:** Danger
- **Hazard-determining components of labelling:**
4,4' methylene diphenyl diisocyanate oligomers
tributyl phosphate
- **Hazard statements:**
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

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Trade name: SHERAPOLAN 2:1 (Component B)

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H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:

- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
- P285 In case of inadequate ventilation wear respiratory protection.
- P302+P352 IF ON SKIN: Wash with plenty of water.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P312 Call a POISON CENTER/doctor if you feel unwell.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P501 Dispose of contents / container in accordance with local / regional / national / international regulations.

Additional information:

Contains isocyanates. May produce an allergic reaction.

2.3 Other hazards
Results of PBT and vPvB assessment:

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Mixtures
Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

CAS: 25686-28-6 Reg.nr.: 01-2119457013-49	4,4' methylene diphenyl diisocyanate oligomers Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	50-75%
CAS: 38640-62-9 Reg.nr.: 01-2119565150-48	Alkylated aromatic hydrocarbons Asp. Tox. 1, H304; Aquatic Chronic 1, H410	25-50%
CAS: 126-73-8 EINECS: 204-800-2 Index number: 015-014-00-2 Reg.nr.: 01-2119492859-14	tributyl phosphate Carc. 2, H351; Acute Tox. 4, H302; Skin Irrit. 2, H315	0.25-1%

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

SECTION 4: First aid measures

4.1 Description of first aid measures
General information:

Involve doctor immediately.

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

After inhalation:

Supply fresh air and to be sure call for a doctor.

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

After skin contact:

If skin irritation continues, consult a doctor.

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: If symptoms persist consult doctor.

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- **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:**
CO₂, powder or water spray. Fight larger fire with alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Nitrogen oxides (NO_x).
Carbon monoxide (CO).
Hydrogen cyanide (HCN).
Isocyanate vapours.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Do not inhale explosion gases or combustion gases.
Wear fully protective suit.
Wear self-contained respiratory protective device.
- **Additional information**
Cool endangered receptacles with water spray.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Avoid contact with skin and eyes.
Keep people at a distance and stay on the windward side.
- **6.2 Environmental precautions**
Inform respective authorities in case of seepage into water course or sewage system.
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 item 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.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Avoid contact with skin, eye and clothing.
Do not breathe vapours.
Ensure good ventilation / exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
Keep container in a well-ventilated and dry place.

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- Keep container tightly closed.
- Storage temperature: 20 up to 25°C.
- **Information about storage in one common storage facility:**
 - Store away from water.
 - Store away from foodstuffs.
- **Further information about storage conditions:**
 - Protect from humidity and water.
 - Protect from frost.
 - Keep container tightly sealed.
- **Storage class:** No information available.
- **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:**

25686-28-6 4,4' methylene diphenyl diisocyanate oligomers

MAK (Germany)	Short-term value: 0.05 mg/m ³ Long-term value: 0.05 mg/m ³
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126-73-8 tributyl phosphate

WEL (Great Britain)	Short-term value: 5 mg/m ³ Long-term value: 5 mg/m ³
AGW (Germany)	Long-term value: 11 mg/m ³ , 1 ppm 2 (II);DFG, Y, H, 11

· **DNELs:**

25686-28-6 4,4' methylene diphenyl diisocyanate oligomers

Dermal	DNEL Worker - Long Term - Systemic effects	4.3 mg/kg (workers)
Inhalative	DNEL Worker - Long Term - Systemic effects	30 mg/m ³ (workers)
126-73-8 tributyl phosphate		
Dermal	DNEL Worker - Long Term - Systemic effects	0.44 mg/kg (workers)
Inhalative	DNEL Worker - Long Term - Systemic effects	3.13 mg/m ³ (workers)

· **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:**
 - The usual precautionary measures are to be adhered to when handling chemicals.
 - 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 eyes and skin.

· **Respiratory protection:**

Filter P2.
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**



Protective gloves

The glove material has to be impermeable and resistant to the product. Due to missing tests no recommendation to the glove material can be given for the product. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

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- **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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **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.

- **Eye/face protection**



Tightly sealed goggles

- **Body protection:** Protective work clothing.

SECTION 9: Physical and chemical properties

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

- **General Information**

· Physical state	Fluid
· Colour:	Orange
· Odour:	characteristic
· Melting point/freezing point:	41 °C
· Boiling point or initial boiling point and boiling range	300 °C
· Flammability	Not applicable.
· Lower and upper explosion limit	
· Lower:	Not determined.
· Upper:	Not determined.
· Flash point:	>150 °C
· Auto-ignition temperature:	Product is not selfigniting.
· Decomposition temperature:	Not determined.
· pH	Not determined.
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic at 20 °C:	220 mPas
· Solubility	
· water:	Reacts with water under formation of CO ₂ , danger of bursting.
· Partition coefficient n-octanol/water (log value)	Not determined.
· Vapour pressure at 25 °C:	0 hPa
· Density and/or relative density	
· Density at 20 °C:	1.23 g/cm ³
· 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.	
· Ignition temperature:	400 °C
· Explosive properties:	Product does not present an explosion hazard.
· Solvent content:	
· Organic solvents:	1.0 %

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· VOC (EC):	0,85 %
· Solids content:	0.0 %
· 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	Void.
· 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 data available.
- **10.2 Chemical stability** No data available.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No hazardous reactions known.
- **10.4 Conditions to avoid**
Heat, flames and sparks.
Moisture.
- **10.5 Incompatible materials**
Water, alcohols, amines, bases and acids.
Oxidizing agents.
Acids.
- **10.6 Hazardous decomposition products**
No dangerous products of decomposition if the product is stored and used according to regulations.

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity:** No data available.

· LD/LC50 values relevant for classification:

25686-28-6 4,4' methylene diphenyl diisocyanate oligomers

Oral	LD50	>5,000 mg/kg (Rat) (OECD 425)
	LC50	>5,000 mg/kg (Rat)
Dermal	LD50	>9,400 mg/kg (Rat) (OECD 402)
Inhalative	LC50/4 h	0.368 mg/l (Rat) (OECD 403)
	LC50/1 h	>2.24 mg/l (Rat)

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38640-62-9 Alkylated aromatic hydrocarbons

Oral	NOAEL	~170 mg/kg (Rat)
	LD50	>4,000 mg/kg (Rat)
Dermal	LD50	>4,000 mg/kg (Rat)
Inhalative	LC50/4 h	>5.6 mg/l (Rat)

126-73-8 tributyl phosphate

Oral	LD50	1,552 mg/kg (Rat)
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- **Skin corrosion/irritation** Causes skin irritation.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **Respiratory or skin sensitisation**
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
- **Carcinogenicity** Suspected of causing cancer.
- **STOT-single exposure** May cause respiratory irritation.
- **STOT-repeated exposure** May cause damage to organs through prolonged or repeated exposure.
- **11.2 Information on other hazards**

· Endocrine disrupting properties
--

None of the ingredients is listed.

SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:**

25686-28-6 4,4' methylene diphenyl diisocyanate oligomers

LC50/96 h	>1,000 mg/l (Fish)
EC50/24 h	>1,000 mg/l (Daphnia (Daphnia magna))
EC50/72 h	>100 mg/l (Bacterial)
	>1,000 mg/l (Daphnia)

38640-62-9 Alkylated aromatic hydrocarbons

EC0/48 h	0.16 mg/l (Daphnia)
EC0/72 h	0.15 mg/l (Algae)
LC0/96 h	0.5 mg/l (Fish)

126-73-8 tributyl phosphate

NOEC, 21d	1.3 mg/l (Daphnia (Daphnia magna))
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- **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**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Also poisonous for fish and plankton in water bodies.

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Very toxic for aquatic organisms.

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SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation:**

Must be specially treated adhering to official regulations.

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

· **Waste disposal key:**

The waste disposal code as prescribed in the European Waste Catalogue (EWC) depends on the waste producer and can thus vary for a product. The waste disposal code should thus be obtained separately from the waste producer in each case.

· **Uncleaned packaging:**

· **Recommendation:** Dispose unclean packages in compliance with the local, official regulations.

SECTION 14: Transport information

· **14.1 UN number or ID number**

· **ADR, IMDG, IATA**

UN3082

· **14.2 UN proper shipping name**

· **ADR**

3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alkylated aromatic hydrocarbons)

· **IMDG**

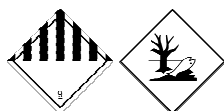
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alkylated aromatic hydrocarbons), MARINE POLLUTANT

· **IATA**

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alkylated aromatic hydrocarbons)

· **14.3 Transport hazard class(es)**

· **ADR, IMDG, IATA**



· **Class**

9 Miscellaneous dangerous substances and articles.

· **Label**

9

· **14.4 Packing group**

· **ADR, IMDG, IATA**

III

· **14.5 Environmental hazards:**

· **Marine pollutant:**

Yes.

Symbol (fish and tree)

· **Special marking (ADR):**

Symbol (fish and tree)

· **Special marking (IATA):**

Symbol (fish and tree)

· **14.6 Special precautions for user**

Warning: Miscellaneous dangerous substances and articles.

· **Hazard identification number (Kemler code):**

90

· **EMS Number:**

F-A,S-F

· **Stowage Category**

A

· **14.7 Maritime transport in bulk according to IMO instruments**

Not applicable.

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· **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:** -

· **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 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ALKYLATED AROMATIC HYDROCARBONS), 9, III

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** None of the ingredients is listed.
- **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

· **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 not been carried out.

SECTION 16: Other information

This information is based on the state of knowledge and experience pertaining on the date of issue. The information is not to be taken as a guarantee of product properties and do not constitute the basis for a contractual legal relationship. The details must not be changed or transferred to other products. Duplication in an unchanged state is permissible.

· **Relevant phrases**

- H302 Harmful if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H335 May cause respiratory irritation.
- H351 Suspected of causing cancer.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H410 Very toxic to aquatic life with long lasting effects.

- **Department issuing SDS:** Department of product security.

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· **Abbreviations and acronyms:**

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)
 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)
 VOC: Volatile Organic Compounds (USA, EU)
 DNEL: Derived No-Effect Level (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
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
 Resp. Sens. 1: Respiratory sensitisation – Category 1
 Skin Sens. 1: Skin sensitisation – Category 1
 Carc. 2: Carcinogenicity – Category 2
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
 STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
 Asp. Tox. 1: Aspiration hazard – Category 1
 Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

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

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