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

1.1 Product identifier

HENSOTHERM® 921 KS Stamm

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

1.2.1 Relevant uses

Fire retardant coating
Contains nano compounds

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

Rudolf Hensel GmbH
Lauenburger Landstr. 11
21039 Börnsen / GERMANY
Phone +49 (0)40-72 10 62 10
Fax +49 (0)40-72 10 62 52
Homepage www.rudolf-hensel.de
E-mail info@rudolf-hensel.de

Address enquiries to

Technical information info@rudolf-hensel.de

Safety Data Sheet sdb@chemiebuero.de (No dispatch of safety data sheets)
Safety data sheets are available from the supplier.

1.4 Emergency telephone number

Company +49 (0)40-72 10 62 10 (7:00 - 17:00) 0172 4115390 (17:00 - 07:00)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture [REGULATION (EC) No 1272/2008]

Skin Irrit. 2: H315 Causes skin irritation.
Skin Sens. 1: H317 May cause an allergic skin reaction.
Eye Dam. 1: H318 Causes serious eye damage.
Aquatic Chronic 2: H411 Toxic to aquatic life with long lasting effects.
Carc. 2: H351 Suspected of causing cancer.

2.2 Label elements

Hazard pictograms

Signal word DANGER

Contains: Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane

Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane

[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane

Trimethylolpropan triacrylate

Bis-[4-(2,3-epoxipropoxi)phenyl]propane

Hazard statements
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H351 Suspected of causing cancer.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe vapours / spray.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves / protective clothing / eye protection / face 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.
P308+P313 IF exposed or concerned: Get medical advice / attention.
P310 Immediately call a POISON CENTER / doctor.
P391 Collect spillage.
P501 Dispose of contents/container in accordance with local/national regulation.

Special labelling EUH205 Contains epoxy constituents. May produce an allergic reaction.

2004/42/CE < 5 g/l II A j SB Two-pack reactive performance coatings (max. 500 g/l)

2.3 Other hazards

Human health hazards The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
It is essential for pregnant women to avoid inhaling the product and not to let it come in contact with the skin.

Environmental hazards This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Further hazards Further hazards were not determined with the current level of knowledge.

SECTION 3: Composition / Information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

The product is a mixture.

Range [%]	Substance
10 - <25	Bis-[4-(2,3-epoxipropoxi)phenyl]propane
	CAS: 1675-54-3, EINECS/ELINCS: 216-823-5, EU-INDEX: 603-073-00-2, Reg-No.: 01-2119456619-26-XXXX
	GHS/CLP: Skin Irrit. 2: H315 - Skin Sens. 1: H317 - Eye Irrit. 2: H319 - Aquatic Chronic 2: H411
	SCL [%]: >= 5: Skin Irrit. 2: H315, >= 5: Eye Irrit. 2: H319
10 - <25	Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
	EINECS/ELINCS: 701-333-0, Reg-No.: 01-2120759332-55-XXXX
	GHS/CLP: Skin Irrit. 2: H315 - Skin Sens. 1: H317 - Eye Irrit. 2: H319
5 - <15	Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane
	EINECS/ELINCS: 701-263-0, Reg-No.: 01-2119454392-40-XXXX
	GHS/CLP: Skin Irrit. 2: H315 - Skin Sens. 1A: H317 - Aquatic Chronic 2: H411 - EUH205
1 - <5	[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane
	CAS: 2530-83-8, EINECS/ELINCS: 219-784-2, Reg-No.: 01-2119513212-58-XXXX
	GHS/CLP: Eye Dam. 1: H318 - Aquatic Chronic 3: H412
1 - <5	Trimethylolpropan triacrylate
	CAS: 15625-89-5, EINECS/ELINCS: 239-701-3, EU-INDEX: 607-111-00-9, Reg-No.: 01-2119489896-11-XXXX
	GHS/CLP: Skin Irrit. 2: H315 - Skin Sens. 1: H317 - Eye Irrit. 2: H319 - Carc. 2: H351 - Aquatic Acute 1: H400 - Aquatic Chronic 1: H410, M-Factor (acute): 1 , M-Factor (chronic): 1
1 - <5	1,2,3-Propanetriol, glycidyl ethers
	CAS: 90529-77-4, EINECS/ELINCS: 292-011-4
	GHS/CLP: Skin Irrit. 2: H315 - Eye Irrit. 2: H319

Comment on component parts For full text of H-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information Take off contaminated clothing and wash before reuse.

Inhalation Remove person to fresh air and keep comfortable for breathing.
In the event of symptoms seek medical treatment.

Skin contact In case of contact with skin wash off immediately with soap and water.
Seek medical advice immediately.

Eye contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Seek medical advice immediately.

Ingestion Consult a doctor immediately.
Do not induce vomiting.
Rinse out mouth and give plenty of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

Allergic reactions
Irritant effects

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Foam.
Dry powder.
Water spray jet.
Carbon dioxide.

Extinguishing media that must not be used

Full water jet.

5.2 Special hazards arising from the substance or mixture

Risk of formation of toxic pyrolysis products.

5.3 Advice for firefighters

Use self-contained breathing apparatus.

Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.
Collect contaminated firefighting water separately, must not be discharged into the drains.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.
Use breathing apparatus if exposed to vapours.
High risk of slipping due to leakage/spillage of product.
Use personal protective equipment (protective gloves, safety glasses, protective clothing).

6.2 Environmental precautions

In case the product spills into drains/surface waters/groundwater, immediately inform the authorities.
Avoid disposing down drains or into waterways, as this can lead to environmental contamination.

6.3 Methods and material for containment and cleaning up

Pick up with absorbent material (e.g. sand, sawdust, universal absorbent, diatomaceous earth).
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Use only in well-ventilated areas.
Provide suitable vacuuming at the processing area.
Utilize systems to contain material, thereby minimizing the release of it into the environment.

Do not eat, drink, smoke or snuff while working.
Take off contaminated clothing and wash before reuse.
Use barrier skin cream.
After worktime and before work breaks the affected skin areas must be thoroughly cleaned.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Prevent penetration into the ground.
Store tightly closed to minimize the risk of spilling during storage and transfer.

Do not store together with oxidizing agents.
Do not store together with food and animal food/diet.

Keep container tightly closed.
Keep container in a well-ventilated place.
Keep in a cool place. Store in a dry place.
Protect from heat/overheating.

Storage class (TRGS 510) Storage class 10 - 13 (VCI)

7.3 Specific end use(s)

See product use, SECTION 1.2

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored DE (TRGS 900)

not relevant

Ingredients with occupational exposure limits to be monitored EU (2004/37/EG)

not relevant

DNEL

Substance
Trimethylolpropan triacrylate, CAS: 15625-89-5
Industrial, inhalative, Long-term - systemic effects, 17,1 mg/m³
Industrial, dermal, Long-term - systemic effects, 404 mg/kg bw/day
Bis-[4-(2,3-epoxipropoxi)phenyl]propane, CAS: 1675-54-3
Industrial, inhalative, Long-term - systemic effects, 4.93 mg/m³ (AF=12.5)
Industrial, dermal, Long-term - systemic effects, 0.75 mg/kg bw/d (AF=100)
general population, dermal, Long-term - systemic effects, 89.3 µg/kg bw/d (AF=200)
general population, oral, Long-term - systemic effects, 0,5 mg/kg bw/day
general population, inhalative, Long-term - systemic effects, 0,87 mg/m³
Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
Industrial, inhalative, Long-term - systemic effects, 12,1 mg/m³
Industrial, dermal, Long-term - systemic effects, 3,43 mg/kg bw/day
general population, inhalative, Long-term - systemic effects, 2,13 mg/m³
general population, dermal, Long-term - systemic effects, 1,23 mg/kg bw/day
general population, oral, Long-term - systemic effects, 1,23 mg/kg bw/day
Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane
Industrial, inhalative, Long-term - systemic effects, 29,39 mg/m³
Industrial, dermal, Long-term - systemic effects, 104,15 mg/kg bw/day
Industrial, dermal, Acute - local effects, 8,3 µg/cm²
general population, inhalative, Long-term - systemic effects, 8,7 mg/m³
general population, dermal, Long-term - systemic effects, 62,5 mg/kg bw/day
general population, oral, Long-term - systemic effects, 6,25 mg/kg bw/day

PNEC

Substance
Trimethylolpropan triacrylate, CAS: 15625-89-5
freshwater, 0,87 µg/L
seawater, 0,087 µg/L
sewage treatment plants (STP), 6,25 mg/L
sediment (freshwater), 0,017 mg/kg sediment dw
sediment (seawater), 0,002 mg/kg sediment dw
soil, 0,003 mg/kg soil dw
oral (food), 10 mg/kg
Bis-[4-(2,3-epoxipropoxi)phenyl]propane, CAS: 1675-54-3
freshwater, 0.006 mg/L (AF=50)
seawater, 0.001 mg/L (AF=500)
sewage treatment plants (STP), 10 mg/L (AF=10)
sediment (freshwater), 0,341 mg/kg sediment dw

sediment (seawater), 0,034 mg/kg sediment dw
soil, 0,065 mg/kg soil dw
oral (food), 11 mg/kg food (AF=90)
Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
freshwater, 7,49 µg/L
seawater, 0,749 µg/L
sediment (freshwater), 39,5 mg/kg sediment dw
sediment (seawater), 3,95 mg/kg sediment dw
soil, 3,5 µg/kg soil dw
Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane
freshwater, 0,003 mg/L
seawater, 0 mg/L
sewage treatment plants (STP), 10 mg/L
sediment (freshwater), 0,294 mg/kg sediment dw
sediment (seawater), 0,029 mg/kg sediment dw
soil, 0,237 mg/kg soil dw

8.2 Exposure controls

Additional advice on system design
Ensure adequate ventilation on workstation.
Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances.

Eye protection
Safety glasses. (EN 166:2001)

Hand protection
0,4 mm Butyl rubber, >480 min (EN 374-1/-2/-3).
The details concerned are recommendations. Please contact the glove supplier for further information.

Skin protection
Protective clothing (EN 340)

Other
Avoid contact with eyes and skin.
Do not breathe vapour/spray.
Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier.
Avoid contact during pregnancy/ while nursing.

Respiratory protection
In the event of occupational exposure limits being exceeded or of inadequate ventilation: wear appropriate respiratory protection.
Short term: filter apparatus, combination filter A-P2. (DIN EN 14387)

Thermal hazards
not applicable

Delimitation and monitoring of the environmental exposition
Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Form	liquid
Color	No information available.
Odor	characteristic
Odour threshold	not relevant
pH-value	not applicable
pH-value [1%]	not applicable
Boiling point or initial boiling point and boiling range [°C]	not determined
Flash point [°C]	not applicable
Flammability	not determined
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	not determined
Density [g/cm³]	No information available.
Relative density	not determined
Bulk density [kg/m³]	not applicable
Solubility in water [g/L]	insoluble
Solubility other solvents	No information available.
Partition coefficient n-octanol/water (log value)	not determined
Kinematic viscosity	No information available.
Relative vapour density	not determined
Melting point [°C]	not determined
Auto-ignition temperature [°C]	not self-igniting
Decomposition temperature [°C]	not applicable
Particle characteristics	not applicable

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

The product is stable under standard conditions.

10.3 Possibility of hazardous reactions

Reactions with strong oxidizing agents, strong acids and alkalis.

10.4 Conditions to avoid

See SECTION 7

10.5 Incompatible materials

Oxidizing agent
Acids
Alkalies

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute oral toxicity

Product
ATE-mix, oral, > 2000 mg/kg

Substance
Trimethylolpropan triacrylate, CAS: 15625-89-5
LD50, oral, Rat, > 5000 mg/kg
Bis-[4-(2,3-epoxipropoxi)phenyl]propane, CAS: 1675-54-3
LD50, oral, Rat, > 15000 mg/kg
Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
LD50, oral, Rat, 3595 mg/kg, QSAR
Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane
LD50, oral, Rat, >5000 mg/kg, OECD 401
1,2,3-Propanetriol, glycidyl ethers, CAS: 90529-77-4
LD50, oral, Rat, > 5000 mg/kg

Acute dermal toxicity

Product
ATE-mix, dermal, > 2000 mg/kg

Substance
Trimethylolpropan triacrylate, CAS: 15625-89-5
LD50, dermal, Rabbit, > 5000 mg/kg
Bis-[4-(2,3-epoxipropoxi)phenyl]propane, CAS: 1675-54-3
LD50, dermal, Rabbit, > 23000 mg/kg
Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
LD50, dermal, Rat, > 2000 mg/kg, OECD 402
Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane
LD50, dermal, Rat, >2000 mg/kg, OECD 402

Acute inhalational toxicity

Product
ATE-mix, inhalation (vapour), > 20 mg/l 4h

Substance
Trimethylolpropan triacrylate, CAS: 15625-89-5
LC50, inhalation (vapour), Rat, > 0,55 mg/l (IRT), 6h

Serious eye damage/irritation Based on the available information, the classification criteria are fulfilled.
Risk of serious damage to eyes.
Calculation method

Substance
Trimethylolpropan triacrylate, CAS: 15625-89-5
Eye, Rabbit, (Draize-Test), irritant
Bis-[4-(2,3-epoxipropoxi)phenyl]propane, CAS: 1675-54-3

Eye, irritant
Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
Eye, QSAR, irritant
Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane
Eye, Rabbit, OECD 405, non-irritating

Skin corrosion/irritation

Based on the available information, the classification criteria are fulfilled.
Irritant
Calculation method

Substance
Trimethylolpropan triacrylate, CAS: 15625-89-5
dermal, Rabbit, (Draize-Test), irritant
Bis-[4-(2,3-epoxipropoxi)phenyl]propane, CAS: 1675-54-3
dermal, irritant
Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
dermal, QSAR, irritant
Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane
dermal, Rabbit, OECD 404, irritant

Respiratory or skin sensitisation

Based on the available information, the classification criteria are fulfilled.
May cause an allergic skin reaction.
Calculation method

Substance
Trimethylolpropan triacrylate, CAS: 15625-89-5
dermal, Guinea pig, sensitising
Bis-[4-(2,3-epoxipropoxi)phenyl]propane, CAS: 1675-54-3
dermal, sensitising
Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
dermal, QSAR, sensitising
Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane
dermal, mouse, OECD 429, sensitising

Specific target organ toxicity — single exposure

Based on the available information, the classification criteria are not fulfilled.

Specific target organ toxicity — repeated exposure

Based on the available information, the classification criteria are not fulfilled.

Substance
Trimethylolpropan triacrylate, CAS: 15625-89-5
NOAEL, oral, Rat, 173 mg/kg bw/day (subchronic), no adverse effect observed
NOAEL, dermal, Rabbit, 500 mg/kg bw/day (subacute), no adverse effect observed
Bis-[4-(2,3-epoxipropoxi)phenyl]propane, CAS: 1675-54-3
NOAEL, oral, Rat, 50 mg/kg bw/day (chronic), The effects observed are not sufficient for classification.
NOAEL, dermal, Rat, 100 mg/kg bw/day (chronic), The effects observed are not sufficient for classification.
Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
NOAEL, oral, Rat, 245 mg/kg bw/day, OECD 422, no adverse effect observed
Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane
NOAEL, oral, Rat, 250 mg/kg bw/day, OECD 408, The effects observed are not sufficient for classification.

Mutagenicity Based on the available information, the classification criteria are not fulfilled.

Substance
Trimethylolpropan triacrylate, CAS: 15625-89-5
in vitro, no adverse effect observed
in vivo, no adverse effect observed
Bis-[4-(2,3-epoxipropoxi)phenyl]propane, CAS: 1675-54-3
in vitro, The effects observed are not sufficient for classification.
in vivo, no adverse effect observed
Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
in vivo, no adverse effect observed
Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane
in vitro, OECD 471, negative
oral, mouse, OECD 474, negative

Reproduction toxicity Based on the available information, the classification criteria are not fulfilled.

- Fertility

Substance
Trimethylolpropan triacrylate, CAS: 15625-89-5
NOAEL, oral, Rat, 300 mg/kg bw/day, no adverse effect observed
Bis-[4-(2,3-epoxipropoxi)phenyl]propane, CAS: 1675-54-3
NOAEL, oral, Rat, 750 mg/kg bw/day (subchronic), no adverse effect observed, Effect on fertility,
Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
NOAEL, oral, Rat, 245 mg/kg bw/day, OECD 422, no adverse effect observed
Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane
NOAEL, oral, Rat, 750 mg/kg bw/day, OECD 416, The effects observed are not sufficient for classification.

- Development

Substance
Trimethylolpropan triacrylate, CAS: 15625-89-5
NOAEL, oral, Rabbit, 130 mg/kg bw/day
Bis-[4-(2,3-epoxipropoxi)phenyl]propane, CAS: 1675-54-3
NOAEL, oral, Rabbit, 180 mg/kg bw/day (subacute), no adverse effect observed, Effect on developmental toxicity,
NOAEL, dermal, Rabbit, 300 mg/kg bw/day (subacute), no adverse effect observed, Effect on developmental toxicity,
Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
NOAEL, oral, Rat, 300 mg/kg bw/day (subacute), no adverse effect observed
Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane
NOAEL, oral, Rabbit, 180 mg/kg bw/day, The effects observed are not sufficient for classification.

Carcinogenicity Based on the available information, the classification criteria are fulfilled.
Suspected of causing cancer.
Calculation method

Substance
Trimethylolpropan triacrylate, CAS: 15625-89-5
adverse effect observed

Aspiration hazard Based on the available information, the classification criteria are not fulfilled.

General remarks

The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists. Toxicological data of complete product are not available.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties Does not contain a relevant substance that meets the classification criteria.

11.2.2 Other information

SECTION 12: Ecological information

12.1 Toxicity

Substance
Trimethylolpropan triacrylate, CAS: 15625-89-5
LC50, (96h), Brachidanio rerio, 0,87 mg/l, OECD 203
EC50, (48h), Daphnia magna, 19,9 mg/l (RL 79/831/EWG)
EC50, (72h), Desmodesmus subspicatus, 4,86 mg/l
Bis-[4-(2,3-epoxipropoxi)phenyl]propane, CAS: 1675-54-3
LC50, (96h), Fish, 2 mg/L
LC50, (96h), Oncorhynchus mykiss, 1,5 mg/L
EC50, (48h), Daphnia magna, 1,8 mg/L
ErC50, (72h), Algae, 11 mg/L
Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
EC50, Daphnia magna, 10 - 100 mg/L OECD 202
EC50, (48h), Invertebrates, 39 - 57 mg/L
Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane
EC50, (96h), Leuciscus idus, 2,54 mg/L
EC50, (48h), Daphnia magna, 2,55 mg/L
EC50, (72h), Algae, 1,8 mg/L

12.2 Persistence and degradability

Behaviour in environment compartments not determined

Behaviour in sewage plant not determined

Biological degradability not determined

Substance
Trimethylolpropan triacrylate, CAS: 15625-89-5
(28d), 82 - 90 %, OECD 301 B, The product is readily biodegradable.
Bis-[4-(2,3-epoxipropoxi)phenyl]propane, CAS: 1675-54-3
(28d), 6 - 12 %, OECD 301 F
Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
Biological degradability:, QSAR, The product is readily biodegradable.
Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane
(28d), 16 %, OECD 301 B

12.3 Bioaccumulative potential

Accumulation in organisms is not expected.

Substance
Trimethylolpropan triacrylate, CAS: 15625-89-5
BCF, 21
Bis-[4-(2,3-epoxipropoxi)phenyl]propane, CAS: 1675-54-3
log Pow, 2,64 - 3,78
Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane
log Pow, 3,3

12.4 Mobility in soil

Spillages may penetrate the soil causing ground water contamination.

Substance
Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
Koc, ca. 16,7 L/kg, QSAR

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Endocrine disrupting properties

Does not contain a relevant substance that meets the classification criteria.

12.7 Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

Dispose of as hazardous waste.
Disposal in an incineration plant in accordance with the regulations of the local authorities.
Dispose of the product in compliance with local, regional, and national regulations regarding plastic waste.
Ensure that the material is properly contained during disposal to prevent any spillage into the environment, particularly into watercourses or water bodies.
Do not dispose it in the environment or via household waste systems.

Waste no. (recommended) 080111*

Contaminated packaging

Uncontaminated packaging may be taken for recycling.
Packaging that cannot be cleaned should be disposed of as for product.

Waste no. (recommended) 150110* packaging containing residues of or contaminated by hazardous substances

SECTION 14: Transport information

14.1 UN number or ID number

Transport by land according to ADR/RID	3082
Inland navigation (ADN)	3082
Marine transport in accordance with IMDG	3082
Air transport in accordance with IATA	3082

14.2 UN proper shipping name

Transport by land according to ADR/RID	Environmentally hazardous substance, liquid, n.o.s. (2,2-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane)
- Classification Code	M6
- Label	
- ADR LQ	5 l
- ADR 1.1.3.6 (8.6)	Transport category (tunnel restriction code) 3 (-)
Inland navigation (ADN)	Environmentally hazardous substance, liquid, n.o.s. (2,2-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane)
- Classification Code	M6
- Label	
Marine transport in accordance with IMDG	Environmentally hazardous substance, liquid, n.o.s. (2,2-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane)
- EMS	F-A, S-F
- Label	
- IMDG LQ	5 l
Air transport in accordance with IATA	Environmentally hazardous substance, liquid, n.o.s. (2,2-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane)
- Label	

14.3 Transport hazard class(es)

Transport by land according to ADR/RID	9 (N)
Inland navigation (ADN)	9 (N)
Marine transport in accordance with IMDG	9
Air transport in accordance with IATA	9

14.4 Packing group

Transport by land according to ADR/RID	III
Inland navigation (ADN)	III
Marine transport in accordance with IMDG	III
Air transport in accordance with IATA	III

14.5 Environmental hazards

Transport by land according to ADR/RID	yes
Inland navigation (ADN)	yes
Marine transport in accordance with IMDG	MARINE POLLUTANT
Air transport in accordance with IATA	yes

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

EEC-REGULATIONS	2008/98/EG (2000/532/EC); 2010/75/EU; 2004/42/EG; (EG) 648/2004; (EC) 1907/2006 (REACH); (EU) 1272/2008; 75/324/EWG ((EC) 2016/2037); (EU) 2020/878; (EU) 2016/131; (EU) 2024/573; (EU) 2019/1148; (EU) 2019/1021, (EU) 2023/707
- Comment on component parts	Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.
- Annex XIV (REACH)	According to Annex XIV of Regulation (EC) 1907/2006 (REACH) the product does not contain any substances ≥ 0.1% that are subject to authorisation.
- Annex XVII (REACH)	According to Annex XVII of Regulation (EC) 1907/2006 (REACH) the product contains ≥ 0.1% of substances with the following restrictions. 65, 75, 78 According to Annex XVII of Regulation (EC) 1907/2006 (REACH) the product is subject to the following restrictions. 3
TRANSPORT-REGULATIONS	ADR (2025); IMDG-Code (2025, 42. Amdt.); IATA-DGR (2026, 67th Edition)
NATIONAL REGULATIONS (DE):	Hazardous Substances Ordinance - GefStoffV 21.07.2021; Detergent and Cleaning Agents Act - WRMG; Federal Water Act - WHG; Technical Rule for Hazardous Substances - TRGS: 200, 220, 615, 900, 905.
- Water hazard class	3, conf. AwSV, 18.04.2017
- Decree for case of interference, observe limits	yes
- Class. according to TA-Luft	5.2.5.
- Storage class (TRGS 510)	Storage class 10 - 13 (VCI)
- Observe employment restrictions for people	Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.
- VOC (2010/75/CE)	< 5 g/l
- Other regulations	TRGS 401: Hazards due to skin contact. - Identification, assessment, measures. TRGS 510: Storage of hazardous substances in non-stationary containers TRGS 907: Verzeichnis sensiblisierender Stoffe. DGUV Information 213-079: Tätigkeiten mit Gefahrstoffen - Informationen für Beschäftigte.

15.2 Chemical safety assessment

For this product a chemical safety assessment has not been carried out.

SECTION 16: Other information

16.1 Hazard statements (SECTION 3)

H410 Very toxic to aquatic life with long lasting effects.
H400 Very toxic to aquatic life.
H351 Suspected of causing cancer.
H412 Harmful to aquatic life with long lasting effects.
H318 Causes serious eye damage.
EUH205 Contains epoxy constituents. May produce an allergic reaction.

H411 Toxic to aquatic life with long lasting effects.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H315 Causes skin irritation.

16.2 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
ATE = acute toxicity estimate
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
EL50 = Median effective loading
ELINCS = European List of Notified Chemical Substances
EmS = Emergency Schedules
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50 = Inhibition concentration, 50%
IMDG = International Maritime Code for Dangerous Goods
IUCLID = International Uniform ChemicaL Information Database
IVIS = In vitro irritation score
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
LC0 = lethal concentration, 0%
LOAEL = lowest-observed-adverse-effect level
LL50 = Median lethal loading
LQ = Limited Quantities
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
STP = Sewage Treatment Plant
TLV®/TWA = Threshold limit value – time-weighted average
TLV®STEL = Threshold limit value – short-time exposure limit
VOC = Volatile Organic Compounds
vPvB = very Persistent and very Bioaccumulative

16.3 Other information

Classification procedure

Skin Irrit. 2: H315 Causes skin irritation. (Calculation method)
Skin Sens. 1: H317 May cause an allergic skin reaction. (Calculation method)
Eye Dam. 1: H318 Causes serious eye damage. (Calculation method)
Aquatic Chronic 2: H411 Toxic to aquatic life with long lasting effects. (Calculation method)
Carc. 2: H351 Suspected of causing cancer. (Calculation method)

Modified position

2.1, 2.2, 2.3, 3.2, 12.6, 16.1, 16.3

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