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

1.1 Product identifier

WLK (Binder)

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

1.2.1 Relevant uses

Resin

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

Fischer Elektronik GmbH & Co. KG
Nottebohmstr. 28
58511 Lüdenscheid / GERMANY
Phone +49 2351 4 35-0
Fax +49 2351 4 57 54
Homepage www.fischerelektronik.de
E-mail info@fischerelektronik.de

Address enquiries to

Technical information info@fischerelektronik.de

Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency telephone number

Advisory body +49 (0) 228-19240 (24h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Skin Irrit. 2: H315 Causes skin irritation.
Eye Irrit. 2: H319 Causes serious eye irritation.
Skin Sens. 1: H317 May cause an allergic skin reaction.
Carc. 2: H351 Suspected of causing cancer.
Muta. 2: H341 Suspected of causing genetic defects.
Aquatic Chronic 2: H411 Toxic to aquatic life with long lasting effects.

2.2 Label elements

The product is required to be labelled in accordance with regulation (EC) No 1272/2008 (CLP).

Hazard pictograms



Signal word WARNING

Contains: Reaction product: bisphenol-A-(epichlorhydrin) Epoxy resin (number average molecular weight ≤ 700)

Butyl 2,3-epoxypropyl ether

Hazard statements
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H341 Suspected of causing genetic defects.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements
P201 Obtain special instructions before use.
P273 Avoid release to the environment.
P280 Wear protective gloves / protective clothing / eye protection / face protection.
P308+P311 IF exposed or concerned: Call a POISON CENTER / doctor.
P363 Wash contaminated clothing before reuse.
P501 Dispose of contents/container to in accordance with local/regional/national/international regulation.

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

2.3 Other hazards

Environmental hazards Does not contain any PBT or vPvB substances.

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

SECTION 3: Composition / Information on ingredients

Product-type:

The product is a mixture.

Range [%]	Substance
25 - 50	Reaction product: bisphenol-A-(epichlorhydrin) Epoxy resin (number average molecular weight ≤ 700)
	CAS: 25068-38-6, EINECS/ELINCS: 500-033-5, EU-INDEX: 603-074-00-8
	GHS/CLP: Eye Irrit. 2: H319 - Skin Irrit. 2: H315 - Skin Sens. 1: H317 - Aquatic Chronic 2: H411
1 - 10	Butyl 2,3-epoxypropyl ether
	CAS: 2426-08-6, EINECS/ELINCS: 219-376-4, EU-INDEX: 603-039-00-7
	GHS/CLP: Flam. Liq. 3: H226 - Carc. 2: H351 - Muta. 2: H341 - Acute Tox. 4: H302 H332 - STOT SE 3: H335 - Skin Sens. 1: H317 - Aquatic Chronic 3: H412

Comment on component parts Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.
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
Ensure supply of fresh air.
In the event of symptoms seek medical treatment.

Skin contact
In case of contact with skin wash off immediately with soap and water.
Consult a doctor if skin irritation persists.

Eye contact
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

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

In the event of fire the following can be released:
Carbon monoxide (CO)
Chlorine compounds.

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.
Cool containers at risk with water spray jet.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep away from all sources of ignition.
High risk of slipping due to leakage/spillage of product.
Ensure adequate ventilation.
Use personal protective equipment (protective gloves, safety glasses, protective clothing).

6.2 Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers).
Do not discharge into the drains/surface waters/groundwater.
In case the product spills into drains/surface waters/groundwater, immediately inform the authorities.

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 machines.

Contaminated work clothing should not be allowed out of the workplace.
Do not eat, drink, smoke or take drugs at work.
After worktime and before work breaks the affected skin areas must be thoroughly cleaned.
Use barrier skin cream.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Prevent penetration into the ground.

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.
Protect from heat/overheating.
Keep in a cool place. Store in a dry place.

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 (GB)

Substance
Talc (Mg3H2(SiO3)4)
CAS: 14807-96-6, EINECS/ELINCS: 238-877-9
Long-term exposure: 1 mg/m³, respirable dust
Aluminium oxide
CAS: 1344-28-1, EINECS/ELINCS: 215-691-6
Long-term exposure: 10 mg/m³, inhalable dust (respirable dust: 4 mg/m³)

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	0,7 mm Nitrile 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.
Other	Avoid contact with eyes and skin. Do not inhale vapours. It is essential for pregnant women to avoid inhaling the product and not to let it come in contact with the skin. 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.
Respiratory protection	Breathing apparatus in the event of high concentrations. Short term: combination filter A-P3. (DIN EN 14387)
Thermal hazards	No information available.
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

Form	liquid
Color	blue
Odor	characteristic
Odour threshold	not determined
pH-value	not applicable
pH-value [1%]	not applicable
Boiling point [°C]	not determined
Flash point [°C]	> 100
Flammability (solid, gas) [°C]	not determined
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	not determined
Density [g/ml]	2,0 - 2,2
Bulk density [kg/m³]	not applicable
Solubility in water	immiscible
Partition coefficient [n-octanol/water]	not determined
Viscosity	not applicable
Relative vapour density determined in air	not determined
Evaporation speed	not determined
Melting point [°C]	not determined
Autoignition temperature [°C]	not determined
Decomposition temperature [°C]	not determined

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

Reactions with oxidizing agents.

10.2 Chemical stability

The product is stable under standard conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions known.

10.4 Conditions to avoid

Strong heating.
See SECTION 7

10.5 Incompatible materials

Strong oxidizing agent.
strong acids
Alkalies

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product
dermal, Based on the available information, the classification criteria are not fulfilled.:
ATE-mix, inhalativ (vapour), > 20 mg/l (4 h).
ATE-mix, oral, > 2000 mg/kg.

Substance
Reaction product: bisphenol-A-(epichlorhydrin) Epoxy resin (number average molecular weight ≤ 700), CAS: 25068-38-6
LD50, dermal, Rabbit: 22800 mg/kg bw (GESTIS).
LD50, oral, Rat: 11400 mg/kg bw (GESTIS).
Butyl 2,3-epoxypropyl ether, CAS: 2426-08-6
LD50, dermal, Rabbit: 2520 mg/kg.
LD50, oral, Rat: 1660 mg/kg.
LC50, inhalative, Rat: 14,02 mg/l (4h).

Serious eye damage/irritation
Based on the available information, the classification criteria are fulfilled.
Toxicological data of complete product are not available.
Irritant
Calculation method

Skin corrosion/irritation
Based on the available information, the classification criteria are fulfilled.
Toxicological data of complete product are not available.
Irritant
Calculation method

Respiratory or skin sensitisation
Based on the available information, the classification criteria are fulfilled.
Toxicological data of complete product are not available.
May cause an allergic skin reaction.
Calculation method

Specific target organ toxicity — single exposure
Based on the available information, the classification criteria are not fulfilled.
Toxicological data of complete product are not available.
No classification.
Calculation method

Specific target organ toxicity — repeated exposure
Does not contain a relevant substance that meets the classification criteria.

Mutagenicity
Based on the available information, the classification criteria are fulfilled.
Toxicological data of complete product are not available.
Suspected of causing genetic defects.
Calculation method

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

Carcinogenicity
Based on the available information, the classification criteria are fulfilled.
Toxicological data of complete product are not available.
Suspected of causing cancer.
Calculation method

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

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. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 12: Ecological information

12.1 Toxicity

Substance
Reaction product: bisphenol-A-(epichlorhydrin) Epoxy resin (number average molecular weight ≤ 700), CAS: 25068-38-6
LC50, (96h), Pimephales promelas: 3,1 mg/l (Lit.).
EC50, (48h), Daphnia magna: 1,4-1,7 mg/l (Lit.).
IC50, Bacteria: > 42,6 mg/l/18h (Lit.).

12.2 Persistence and degradability

Behaviour in environment compartments	not determined
Behaviour in sewage plant	not determined
Biological degradability	not determined

12.3 Bioaccumulative potential

not determined

12.4 Mobility in soil

not applicable

12.5 Results of PBT and vPvB assessment

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

12.6 Other adverse effects

Ecological data of complete product are not available.
Do not discharge product unmonitored into the environment or into the drainage.
The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

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

Disposal in an incineration plant in accordance with the regulations of the local authorities. Coordinate disposal with the authorities if necessary.

Waste no. (recommended) 080409*

Contaminated packaging

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

Waste no. (recommended) 150110*
150101
150102
150104

SECTION 14: Transport information

14.1 UN 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. (Bisphenol A Epoxy resin)
- Classification Code	M6
- Label	
- ADR LQ	5 l
- ADR 1.1.3.6 (8.6)	Transport category (tunnel restriction code) 3 (E)
Inland navigation (ADN)	Environmentally hazardous substance, liquid, n.o.s. (Bisphenol A Epoxy resin)
- Classification Code	M6
- Label	
Marine transport in accordance with IMDG	Environmentally hazardous substance, liquid, n.o.s. (Bisphenol A Epoxy resin)
- EMS	F-A, S-F
- Label	
- IMDG LQ	5 l
Air transport in accordance with IATA	Environmentally hazardous substance, liquid, n.o.s. (Bisphenol A Epoxy resin-mixture)
- Label	

14.3 Transport hazard class(es)

Transport by land according to ADR/RID	9
Inland navigation (ADN)	9
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 Transport in bulk according to Annex II of MARPOL and the IBC Code

not applicable

SECTION 15: Regulatory information

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

EEC-REGULATIONS	1991/689 (2001/118); 2010/75; 2004/42; 648/2004; 1907/2006 (REACH); 1272/2008; 75/324/EEC (2008/47/EC); 453/2010/EC; (EU) 2015/830
TRANSPORT-REGULATIONS	DOT-Classification, ADR (2015); IMDG-Code (2015, 37. Amdt.); IATA-DGR (2016).
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011). CHIP 3/ CHIP 4
- 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)	10 %

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information

16.1 Hazard statements (SECTION 03)

H412 Harmful to aquatic life with long lasting effects.
H335 May cause respiratory irritation.
H302+H332 Harmful if swallowed or if inhaled.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.
H226 Flammable liquid and vapour.
H411 Toxic to aquatic life with long lasting effects.
H317 May cause an allergic skin reaction.
H315 Causes skin irritation.
H319 Causes serious eye 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
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
ELINCS = European List of Notified Chemical Substances
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
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
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)
Eye Irrit. 2: H319 Causes serious eye irritation. (Calculation method)
Skin Sens. 1: H317 May cause an allergic skin reaction. (Calculation method)
Carc. 2: H351 Suspected of causing cancer. (Calculation method)
Muta. 2: H341 Suspected of causing genetic defects. (Calculation method)
Aquatic Chronic 2: H411 Toxic to aquatic life with long lasting effects. (Calculation method)

Modified position

none

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

1.1 Product identifier

WLK (Härter)

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

1.2.1 Relevant uses

Hardener

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

Fischer Elektronik GmbH & Co. KG
Nottebohmstr. 28
58511 Lüdenscheid / GERMANY
Phone +49 2351 4 35-0
Fax +49 2351 4 57 54
Homepage www.fischerelektronik.de
E-mail info@fischerelektronik.de

Address enquiries to

Technical information info@fischerelektronik.de

Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency telephone number

Advisory body +49 (0) 228-19240 (24h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Skin Corr. 1B: H314 Causes severe skin burns and eye damage.
Eye Dam. 1: H318 Causes serious eye damage.
Skin Sens. 1: H317 May cause an allergic skin reaction.

2.2 Label elements

The product is required to be labelled in accordance with regulation (EC) No 1272/2008 (CLP).

Hazard pictograms

Signal word DANGER

Contains: 3,3'-oxybis(ethyleneoxy)bis(propylamine)

2-[2-(3-aminopropoxy)ethoxy]ethanol

Hazard statements

H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.

Precautionary statements

P260 Do not breathe vapours.
P280 Wear protective gloves / protective clothing / eye protection / face protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water / 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.
P310 Immediately call a POISON CENTER / doctor.
P501 Dispose of contents/container to in accordance with local/regional/national/international regulation.

Special labelling EUH071 Corrosive to the respiratory tract.

2.3 Other hazards

Human health dangers People who are allergic to amines should avoid the use of the product.

Environmental hazards Does not contain any PBT or vPvB substances.

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

SECTION 3: Composition / Information on ingredients

Product-type:

The product is a mixture.

Range [%]	Substance
75 - <100	3,3'-oxybis(ethyleneoxy)bis(propylamine)
	CAS: 4246-51-9, EINECS/ELINCS: 224-207-2
	GHS/CLP: Skin Corr. 1B: H314 - Eye Dam. 1: H318 - Skin Sens. 1: H317
1 - 10	2-[2-(3-aminopropoxy)ethoxy]ethanol
	CAS: 112-33-4, EINECS/ELINCS: 203-960-0
	GHS/CLP: Skin Corr. 1B: H314 - Eye Dam. 1: H318

Comment on component parts Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.
For full text of H-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information Remove contaminated soaked clothing immediately and dispose of safely.

Inhalation Ensure supply of fresh air.
In the event of symptoms seek medical treatment.

Skin contact In case of contact with skin wash off immediately with soap and water.
Immediate medical treatment necessary, as untreated burns can result in slow-healing wounds.

Eye contact In case of contact with eyes rinse thoroughly and immediately with plenty of water and seek medical advice.
Shield unaffected eye.

Ingestion Do not induce vomiting.
Seek medical advice immediately.
Rinse out mouth and give plenty of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

Product is caustic.
Allergic reactions
Risk of serious damage to eyes.

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

In the event of fire the following can be released:
Carbon monoxide (CO)
Nitrogen oxides (NOx).

5.3 Advice for firefighters

Do not inhale explosion and/or combustion gases.
Use self-contained breathing apparatus.
Wear full protective suit.

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 personal protective equipment.
High risk of slipping due to leakage/spillage of product.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.
In case the product spills into drains/surface waters/groundwater, immediately inform the authorities.

6.3 Methods and material for containment and cleaning up

Take up mechanically.
Take up residues with absorbent material (e.g. sand, sawdust, general purpose binder, 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.

Vapours can form an explosive mixture with air.

Remove contaminated soaked clothing immediately and dispose of safely.
Do not eat, drink, smoke or take drugs at work.
Wash hands before breaks and after work.
Use barrier skin cream.
Showers and eye wash stations should be provided.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Prevent penetration into the ground.

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

Keep container in a well-ventilated place.
Keep container tightly closed.
Keep in a cool place. Store in a dry place.
Protect from atmospheric moisture and water.
Recommended storage temperature: 5-25 °C (41-77 °F).

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 (GB)

not applicable

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	Tightly fitting goggles. (EN 166:2001)
Hand protection	The details concerned are recommendations. Please contact the glove supplier for further information. 0,7 mm Nitrile rubber, >480 min (EN 374-1/-2/-3).
Skin protection	Protective clothing.
Other	Avoid contact with eyes and skin. Do not inhale gases/vapours/aerosols. 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.
Respiratory protection	If ventilation is insufficient, wear 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

Form	liquid
Color	amber colour
Odor	amine-like
Odour threshold	not determined
pH-value	> 12 (100 g/l)
pH-value [1%]	not determined
Boiling point [°C]	146 - 148
Flash point [°C]	178,5
Flammability (solid, gas) [°C]	not applicable
Lower explosion limit	not determined
Upper explosion limit	not determined
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	0,000005 (20 °C)
Density [g/ml]	0,98
Bulk density [kg/m³]	not applicable
Solubility in water	miscible
Partition coefficient [n-octanol/water]	not determined
Viscosity	not determined
Relative vapour density determined in air	not determined
Evaporation speed	not determined
Melting point [°C]	-32
Autoignition temperature [°C]	268
Decomposition temperature [°C]	not determined

9.2 Other information

No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

10.3 Possibility of hazardous reactions

Reactions with oxidizing agents.
Reactions with strong acids.
Reactions with epoxides

10.4 Conditions to avoid

Strong heating.
See SECTION 7.2.

10.5 Incompatible materials

Strong oxidizing agent.

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product
inhalative, Based on the available information, the classification criteria are not fulfilled.:
dermal, Based on the available information, the classification criteria are not fulfilled.:
oral, Based on the available information, the classification criteria are not fulfilled.:

Substance
3,3'-oxybis(ethyleneoxy)bis(propylamine), CAS: 4246-51-9
LD50, dermal, Rabbit: > 2500 mg/kg (OECD 402).
LD50, oral, Rat: ca. 3160 mg/kg.
2-[2-(3-aminopropoxy)ethoxy]ethanol, CAS: 112-33-4
LD50, oral, Rat: 6500 mg/kg bw.

Serious eye damage/irritation
Based on the available information, the classification criteria are fulfilled.
Toxicological data of complete product are not available.
Risk of serious damage to eyes.
Calculation method

Skin corrosion/irritation
Based on the available information, the classification criteria are fulfilled.
Toxicological data of complete product are not available.
Product is caustic.
Calculation method

Respiratory or skin sensitisation
Based on the available information, the classification criteria are fulfilled.
Toxicological data of complete product are not available.
May cause an allergic skin reaction.
Calculation method

Specific target organ toxicity — single exposure
Does not contain a relevant substance that meets the classification criteria.

Specific target organ toxicity — repeated exposure
Does not contain a relevant substance that meets the classification criteria.

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

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

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

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

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. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 12: Ecological information

12.1 Toxicity

Substance
3,3'-oxybis(ethyleneoxy)bis(propylamine), CAS: 4246-51-9
LC50, (96h), Leuciscus idus: > 1000 mg/l (DIN 38412).
EC50, (48h), Daphnia magna: 218,16 mg/l.
2-[2-(3-aminopropoxy)ethoxy]ethanol, CAS: 112-33-4
LC50, (96h), Danio rerio: 681,18 mg/l.
EC50, (48h), Daphnia magna: > 100 mg/l.
EC10, (72h), Scenedesmus subspicatus: > 100 mg/l.

12.2 Persistence and degradability

Behaviour in environment compartments	not determined
Behaviour in sewage plant	not determined
Biological degradability	not determined

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

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

12.6 Other adverse effects

Ecological data of complete product are not available.
The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.
Do not discharge product unmonitored into the environment.

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

Coordinate disposal with the disposal contractor/authorities if necessary.

Waste no. (recommended) 080409*

Contaminated packaging

Uncontaminated packaging may be taken for recycling.
Dispose full / partially emptied cartridges as hazardous waste in accordance with official regulations.

Waste no. (recommended) 150110*

SECTION 14: Transport information

14.1 UN number

Transport by land according to ADR/RID	2735
Inland navigation (ADN)	2735
Marine transport in accordance with IMDG	2735
Air transport in accordance with IATA	2735

14.2 UN proper shipping name

Transport by land according to ADR/RID	Amines, liquid, corrosive, n.o.s. (3,3-oxybis(ethyleneoxy)bis(propylamine), 2-[2-(3-aminopropoxy)ethoxy]ethanol)
- Classification Code	C7
- Label	
- ADR LQ	1 l
- ADR 1.1.3.6 (8.6)	Transport category (tunnel restriction code) 2 (E)
Inland navigation (ADN)	Amines, liquid, corrosive, n.o.s. (3,3-oxybis(ethyleneoxy)bis(propylamine), 2-[2-(3-aminopropoxy)ethoxy]ethanol)
- Classification Code	C7
- Label	
Marine transport in accordance with IMDG	Amines, liquid, corrosive, n.o.s. (3,3-oxybis(ethyleneoxy)bis(propylamine), 2-[2-(3-aminopropoxy)ethoxy]ethanol)
- EMS	F-A, S-B
- Label	
- IMDG LQ	1 l
Air transport in accordance with IATA	Amines, liquid, corrosive, n.o.s. (3,3-oxybis(ethyleneoxy)bis(propylamine), 2-[2-(3-aminopropoxy)ethoxy]ethanol)
- Label	

14.3 Transport hazard class(es)

Transport by land according to ADR/RID	8
Inland navigation (ADN)	8
Marine transport in accordance with IMDG	8
Air transport in accordance with IATA	8

14.4 Packing group

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

14.5 Environmental hazards

Transport by land according to ADR/RID	no
Inland navigation (ADN)	no
Marine transport in accordance with IMDG	no
Air transport in accordance with IATA	no

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

not applicable

SECTION 15: Regulatory information

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

EEC-REGULATIONS	1991/689 (2001/118); 2010/75; 2004/42; 648/2004; 1907/2006 (REACH); 1272/2008; 75/324/EEC (2008/47/EC); 453/2010/EC; (EU) 2015/830
TRANSPORT-REGULATIONS	DOT-Classification, ADR (2015); IMDG-Code (2015, 37. Amdt.); IATA-DGR (2016).
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011). CHIP 3/ CHIP 4
- Observe employment restrictions for people	Observe employment restrictions for young people. Observe employment restrictions for mothers-to-be and nursing mothers.
- VOC (2010/75/CE)	<0,1 %

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information

16.1 Hazard statements (SECTION 03)

H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H314 Causes severe skin burns and eye damage.

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
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
ELINCS = European List of Notified Chemical Substances
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
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
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 Corr. 1B: H314 Causes severe skin burns and eye damage. (Calculation method)
Eye Dam. 1: H318 Causes serious eye damage. (Calculation method)
Skin Sens. 1: H317 May cause an allergic skin reaction. (Calculation method)

Modified position

none