SAFETY DATA SHEET ACCORDING TO REGULATION (EC) 1907/2006

Product name: BX Comp. A (14.0 kg)

Creation date: 20.05.2021, Revision: 17.03.2023, version: 2.1

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name

BX Comp. A (14.0 kg)

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

Relevant identified uses

Epoxy resin

Uses advised against

No information.

1.3 Details of the supplier of the safety data sheet

Supplier

Boldan Oy, Matkuntie 3, 05200 RAJAMÄKI, FINLAND
tel. +358 (0)9 8531042, info@boldan.fi

1.4 Emergency Telephone Number

Emergency

112

Supplier

Boldan Oy, Matkuntie 3, 05200 RAJAMÄKI, FINLAND
tel. +358 (0)9 8531042, info@boldan.fi

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Skin Irrit. 2; H315 Causes skin irritation.
Skin Sens. 1; H317 May cause an allergic skin reaction.
Eye Irrit. 2; H319 Causes serious eye irritation.
Aquatic Chronic 2; H411 Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP]

Signal word: WARNING

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.
P261 Avoid breathing mist/vapours.
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/eye protection/face protection.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P391 Collect spillage.

Contains:
bis-[4-(2,3-epoxypropoxy)phenyl]propane
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol

2.3 Other hazards

PBT/vPvB
No information.

Endocrine disrupting properties
No information.

Additional information
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.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

For mixtures see 3.2.

3.2 Mixtures

Name	CAS EC Index Reach	%	Classification according to Regulation (EC) No 1272/2008 (CLP)	Specific Conc. Limits	Notes for substances
bis-[4-(2,3-epoxypropoxy)phenyl]propane	1675-54-3 216-823-5 603-073-00-2 01-2119456619-26	>=70-<90	Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 Aquatic Chronic 2; H411	Skin Irrit. 2; H315; C ≥ 5% Eye Irrit. 2; H319; C ≥ 5%	/
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	68609-97-2 271-846-8 603-103-00-4 01-2119485289-22	>=10-<20	Skin Irrit. 2; H315 Skin Sens. 1; H317	/	/
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	9003-36-5 500-006-8 - 01-2119454392-40	>=10-<20	Skin Irrit. 2; H315 Skin Sens. 1; H317 Aquatic Chronic 2; H411	/	/

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General notes
Never give anything by mouth to an unconscious person. Place patient in recovery position and ensure airway patency. When in doubt or if feeling unwell seek medical assistance. Show the safety data sheet and label to the physician. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing

aid to give mouth-to-mouth resuscitation.

Following inhalation

Remove patient to fresh air - move out of dangerous area. If symptoms occur, seek medical advice.

Following skin contact

Take off all contaminated clothing. Areas of the body that have come into contact with the product must be rinsed with water. If symptoms persist, seek medical attention. Wash contaminated clothes and shoes before reuse.

Following eye contact

Immediately flush eyes with running water, keeping eyelids apart. If irritation does not stop, seek professional medical treatment! If the patient is wearing contact lenses, remove them immediately.

Following ingestion

Do not induce vomiting! Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Consult a physician. Show the physician the safety data sheet or label.

4.2 Most important symptoms and effects, both acute and delayed

Following inhalation

Excessive exposure to spray mist, fog, or vapours may cause respiratory irritation. Coughing, sneezing, nasal discharge, labored breathing.

Following skin contact

Itching, redness, pain. May cause sensitisation by skin contact (symptoms: itching, redness, rashes).

Following eye contact

Redness, tearing, pain.

Following ingestion

Irritates mucous membranes in the mouth, throat, esophagus and in gastrointestinal area. May cause nausea/vomiting and diarrhea.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Carbon dioxide. Dry chemical powder. Water spray. Alcohol resistant foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

Full water jet.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

In case of a fire toxic gases can be generated; do not inhale gases/smoke. In the event of fire the following can be generated: carbon monoxide (CO), carbon dioxide (CO_2).

5.3 Advice for firefighters

Protective actions

In case of fire or heating do not breathe fumes/vapours. Cool containers at risk with water spray. If possible remove containers from endangered area. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters

Firefighters should wear appropriate protective clothing for firefighters (including helmets, protective boots and gloves)(EN 469) and self-contained breathing apparatus (SCBA) with a full face-piece (EN 137).

Additional information

Contaminated firefighting water must be disposed of in accordance with the regulations; do not allow to reach the sewage system.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Protective equipment

Use personal protective equipment (Section 8). Refer to protective measures listed in Sections 7 and 8.

Precautionary measures

Ensure adequate ventilation.

Emergency procedures

Prevent access to unprotected personnel. Do not breathe vapour or mist. Avoid contact with skin and eyes. No action shall be taken involving any personal risk or without suitable training. Prevent access to unauthorised personnel.

For emergency responders

During intervention, use personal protective equipment (Section 8).

6.2 Environmental precautions

Do not allow product to reach water/drains/sewage systems or permeable soil. If accidental large entry into water or ground occurs, inform responsible authorities.

6.3 Methods and material for containment and cleaning up

For containment

Stem the spill if this does not pose risks.

For cleaning up

Absorb product (with inert material), collect it in special container and dispose it to a licensed hazardous-waste disposal contractor. Dispose in accordance with applicable regulations (see Section 13).

OTHER INFORMATION

See Section 1 for contact information in case of emergency.

6.4 Reference to other sections

See also sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Protective measures

Measures to prevent fire

Ensure adequate ventilation. The usual measures for preventive fire protection.

Measures to prevent aerosol and dust generation

No information.

Measures to protect the environment

No information.

Other measures

No information.

Advice on general occupational hygiene

Use good personal hygiene practices – wash hands at breaks and when done working with material. Do not eat, drink or smoke while working. Avoid contact with skin and eyes. Do not breathe vapours/mist. Refer to instructions on label and regulations for safety and health at work. Wear suitable protective equipment; see Section 8. Persons with a history of

skin sensitisation problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Store in accordance with local regulations. Keep in a cool, dry and well ventilated place. Keep away from food, drink and animal feeding stuffs. Store between: 2 - 40 °C Store in accordance with local regulations.

Packaging materials

No information.

Requirements for storage rooms and vessels

Close opened containers after use. Put the containers upright to prevent from leaking. Do not store in unlabelled containers.

Storage class

No information.

Further information on storage conditions

No information.

7.3 Specific end use(s)

Recommendations No information.

Industrial sector specific solutions

No information.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure limit values

No information.

Information on monitoring procedures

BS EN 14042:2003 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. BS EN 689:2018 Workplace exposure. Measurement of exposure by inhalation to chemical agents. Strategy for testing compliance with occupational exposure limit values. BS EN 482:2021 Workplace exposure. Procedures for the determination of the concentration of chemical agents. Basic performance requirements.

DNEL/DMEL values

For product

No information.

For components

Name	Type	Exposure route	exp. frequency	Remark	value
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Worker	inhalation	long term systemic effects	/	4.93 mg/m³
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Worker	dermal	long term systemic effects	/	0.75 mg/kg bw/day
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Consumer	inhalation	long term systemic effects	/	0.87 mg/m³
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Consumer	dermal	long term systemic effects	/	89.3 µg/kg bw/day
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Consumer	oral	long term systemic effects	/	0.5 mg/kg bw/day

oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	Worker	inhalation	long term systemic effects	/	3.6 mg/m³
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	Worker	dermal	long term systemic effects	/	1 mg/kg bw/day
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	Consumer	inhalation	long term systemic effects	/	0.87 mg/m³
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	Consumer	dermal	long term systemic effects	/	0.5 mg/kg bw/day
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	Consumer	oral	long term systemic effects	/	0.5 mg/kg bw/day

PNEC values

For product

No information.

For components

Name	Exposure route	Remark	value
bis-[4-(2,3-epoxypropoxy)phenyl]propane	fresh water	/	0.006 mg/L
bis-[4-(2,3-epoxypropoxy)phenyl]propane	water, intermittent release	/	0.018 mg/L
bis-[4-(2,3-epoxypropoxy)phenyl]propane	marine water	/	0.001 mg/L
bis-[4-(2,3-epoxypropoxy)phenyl]propane	water, marine, intermittent release	/	0.002 mg/L
bis-[4-(2,3-epoxypropoxy)phenyl]propane	water treatment plant	/	10 mg/L
bis-[4-(2,3-epoxypropoxy)phenyl]propane	fresh water sediment	dry weight	0.341 mg/kg
bis-[4-(2,3-epoxypropoxy)phenyl]propane	marine water sediment	dry weight	0.034 mg/kg
bis-[4-(2,3-epoxypropoxy)phenyl]propane	soil	dry weight	0.065 mg/kg
bis-[4-(2,3-epoxypropoxy)phenyl]propane	secondary poisoning	food	11 mg/kg
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	fresh water	/	0.106 mg/L
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	water, intermittent release	/	0.072 mg/L
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	marine water	/	0.011 mg/L
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	water treatment plant	/	10 mg/L
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	fresh water sediment	dry weight	307.16 mg/kg
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	marine water sediment	dry weight	30.72 mg/kg
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	soil	dry weight	1.234 mg/kg

8.2 Exposure controls

Appropriate engineering control

Substance/mixture related measures to prevent exposure during identified uses

Use good personal hygiene practices – wash hands at breaks and when done working with material. Do not eat, drink or smoke while working. Avoid contact with eyes and skin. Do not breathe vapours/aerosols. Handle in accordance with good industrial hygiene and safety practice.

Structural measures to prevent exposure

No information.

Organisational measures to prevent exposure

Remove all contaminated clothes immediately and wash them before reuse. Keep eyewash bottles or personal eyewash units and emergency showers available.

Technical measures to prevent exposure

Provide good ventilation and local exhaust in areas with increased concentration. Keep away from food, drink and animal feeding stuffs.

Personal protective equipment

Eye and face protection

Tight fitting protective goggles (EN 166). If there is danger of splash or spray use the face shield (BS EN ISO 16321-1:2022).

Hand protection

Protective gloves (EN 374). 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. Observe the manufacturer's instructions regarding the use, storage, maintenance and replacement of gloves. In case of damage or at the first signs of wear and tear, change the gloves immediately. The penetration time is determined by the protective glove manufacturer and must be observed. The selection of specific gloves for a specific application and time of use in a working area, should also take into account other factors on the working space, such as (but not limited to): other chemicals that are possibly used, physical requirements (protection against cutting/drilling, skill, thermal protection), and the instructions/specification of the supplier of gloves.

Appropriate materials

Material	Thickness	Penetration Time	Remark
Butyl rubber	/	> 480 min	BS EN ISO 374
nitrile rubber	/	< 480 min	BS EN ISO 374
Neoprene	/	/	BS EN ISO 374

Skin protection

Cotton protective clothing and shoes that cover the entire foot (BS EN ISO 20345:2022). At high risk of skin exposure chemical suits (BS EN ISO 6530:2005) and boots may be required (BS EN ISO 20345:2022).

Respiratory protection

At elevated concentrations of vapours/aerosols in the air wear a mask (EN 140) with filter A2-P2 (EN 14387).

Thermal hazards

No information.

Environmental exposure controls

Substance/mixture related measures to prevent exposure

Implement measures to protect the environment. Avoid discharge into drains and surface waters.

Instruction measures to prevent exposure

No information.

Organisational measures to prevent exposure

No information.

Technical measures to prevent exposure

No information.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state

liquid

Colour

colourless

Odour

mild

Important health, safety and environmental information

Odour threshold	No information.
Melting point/Freezing point	No information.
Boiling point or initial boiling point and boiling range	> 200 °C at 1013 hPa
Flammability	No information.
Lower and upper explosion limit	No information.

Flash point	ca. 130 °C (Closed cup [Pensky-Martens])
Auto-ignition temperature	No information.
Decomposition temperature	> 200 °C
pH	No information.
Viscosity	Dynamic: 800 — 1100 mPas at 25 °C
Solubility	Water: Insoluble
Partition coefficient	No information.
Vapour pressure	< 1.0E-5 hPa at 20 °C
Density and/or relative density	Density: 1.13 g/cm^3 at 20 °C (DIN 51757)
Relative vapour density	No information.
Particle characteristics	No information.

9.2 OTHER INFORMATION

Explosive properties	No information.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Stable under recommended transport or storage conditions.

10.2 Chemical stability

Product is stable under normal conditions of use, recommended handling and storage conditions.

10.3 Possibility of hazardous reactions

The product is stable under recommended storage and handling conditions. There are no known hazardous reactions.

10.4 Conditions to avoid

No special precautions required. Consider the directions for use and storage.

10.5 Incompatible materials

No information.

10.6 Hazardous decomposition products

Under normal use conditions no hazardous decomposition products are expected. In case of fire/explosion vapours/gases that pose a health hazard are released. Carbon dioxide; Carbon monoxide. Nitrogen oxides (NOx).

SECTION 11: TOXICOLOGICAL INFORMATION

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

(a) Acute toxicity

For product

Exposure route	Type	Species	Time	value	Method	Remark

oral	LD_{50}	rat	/	> 5000 mg/kg	/	/
dermal	LD_{50}	rat	/	> 2000 mg/kg	/	/

For components

Name	Exposure route	Type	Species	Time	value	Method	Remark
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	inhalation	LC_0	rat	7 h	> 0.15 mg/l	/	/

(b) Skin corrosion/irritation

For components

Name	Species	Time	result	Method	Remark
bis-[4-(2,3-epoxypropoxy)phenyl]propane	rabbit	/	Irritating.	OECD 404	/
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	rabbit	24 h	Severe irritation.	/	/
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	rabbit	/	Irritating.	OECD 404	/

(c) Serious eye damage/irritation

For components

Name	Exposure route	Species	Time	result	Method	Remark
bis-[4-(2,3-epoxypropoxy)phenyl]propane	/	rabbit	/	Irritating.	OECD 405	/
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	/	rabbit	/	Mild irritating.	OECD 405	/
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	/	rabbit	/	No irritant effect.	OECD 405	/

(d) Respiratory or skin sensitisation

For product

Exposure route	Species	Time	result	Method	Remark
dermal	guinea pig	/	Sensitizing.	/	/

(e) (Germ cell) mutagenicity

For components

Name	Type	Species	Time	result	Method	Remark
bis-[4-(2,3-epoxypropoxy)phenyl]propane	in-vitro mutagenicity	/	/	Positive with metabolic activation, positive without metabolic activation.	OECD 476	/
bis-[4-(2,3-epoxypropoxy)phenyl]propane	in-vitro mutagenicity	/	/	Positive with metabolic activation, positive without metabolic activation.	OECD 471	0 - 5000 ug/plate
bis-[4-(2,3-epoxypropoxy)phenyl]propane	in-vivo mutagenicity	rat (male/female)	/	Negative.	OECD 478	oral
bis-[4-(2,3-epoxypropoxy)phenyl]propane	in-vivo mutagenicity	somatic cell	/	Negative.	OPPTS 870.5385	oral, 0 - 5000 mg/kg

oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	in-vitro mutagenicity	bacteria (*Salmonella typhimurium*)	/	Positive with metabolic activation, positive without metabolic activation.	OECD 471	Ames test
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	in-vitro mutagenicity	Chinese hamster ovary	/	Negative with metabolic activation, negative without metabolic activation.	OECD 476	Concentration: 0,5 -5.000 µg/mL
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	in-vivo mutagenicity	mouse (bone marrow)	/	Negative.	OECD 474	Exposure time: 24 hr, 48 hr, and 72 hr
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	in-vitro mutagenicity	bacteria (*Salmonella typhimurium*)	/	Positive with metabolic activation, positive without metabolic activation.	OECD 471	/
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	in-vitro mutagenicity	Cell: Mammalian-Animal	/	Positive with metabolic activation, positive without metabolic activation.	OECD 473	Chromosome aberration assay
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	in-vivo mutagenicity	somatic cell	48 h	Negative.	OECD 474	oral, 2000 mg/kg
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	in-vivo mutagenicity	somatic cell	/	Negative.	OECD 486	oral, 2000 mg/kg

(f) Carcinogenicity

For components

Name	Exposure route	Type	Species	Time	value	result	Method	Remark
bis-[4-(2,3-epoxypropoxy) phenyl]propane	oral	-	rat (male/female)	24 months	15 mg/kg	Negative.	OECD 453	7 days a week
bis-[4-(2,3-epoxypropoxy) phenyl]propane	dermal	-	mouse (male)	24 months	0.1 mg/kg	negative	OECD 453	3 days per week
bis-[4-(2,3-epoxypropoxy) phenyl]propane	dermal	/	rat (female)	24 months	1 mg/kg	negative	OECD 453	5 days per week

(g) Reproductive toxicity

For components

Name	Reproductive toxicity type	Type	Species	Time	value	result	Method	Remark
bis-[4-(2,3-epoxypropoxy) phenyl]propane	Reproductive toxicity	NOAEL (F1/F2)	rat (oral)	/	540 mg/kg	/	OECD 416	Two-generation study; Dose: > 750 mg/kg
bis-[4-(2,3-epoxypropoxy) phenyl]propane	Developmental toxicity	NOAEL	Rabbit (female)	/	30 mg/kg bw	not teratogenic	/	dermal
bis-[4-(2,3-epoxypropoxy) phenyl]propane	Developmental toxicity	NOAEL	Rabbit (female)	/	60 mg/kg bw	Did not show teratogenic effects in animal experiments.	OECD 414	oral

bis-[4-(2,3-epoxypropoxy) phenyl]propan e	Developmental toxicity	NOAEL	rat (female)	/	180 mg/kg bw	Did not show teratogenic effects in animal experiments.	OECD 414	oral
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	Developmental toxicity	NOAEL	rat	13 weeks	100 mg/kg bw	/	/	Application Route: Dermal; Frequency of Treatment: 5 days/week
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	Maternal toxicity	NOAEL	rat	6 h	200 mg/kg bw	/	OECD 414	dermal
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	Effects on fertility	NOAEL	rat	/	mg/kg bw	not teratogenic	OECD 416	oral
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	Developmental toxicity	NOAEL	Rabbit (female)	/	30 mg/kg bw	/	/	dermal

Summary of evaluation of the CMR properties

No information.

(h) STOT-single exposure

No information.

(i) STOT-repeated exposure

For components

Name	Exposure route	Type	Species	Time	Exposure	organ	value	result	Method	Remark
bis-[4-(2,3-epoxypropoxy)phenyl]propane	oral	NOAEL	rat (male/female)	14 weeks	sub-chronic	/	50 mg/kg	/	/	7 days/week
bis-[4-(2,3-epoxypropoxy)phenyl]propane	dermal	NOEL	rat	13 weeks	/	/	10 mg/kg	/	/	5 days/week
bis-[4-(2,3-epoxypropoxy)phenyl]propane	dermal	NOAEL	mouse (male)	13 weeks	sub-chronic	/	100 mg/kg	/	/	3 days a week
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	dermal	NOEL	rat	13 weeks	/	/	1 mg/kg	/	OECD 411	5 days/week
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	dermal	LOAEL	rat	13 weeks	/	/	10 mg/kg	/	OECD 411	5 days/week
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	oral	NOAEL	rat	13 weeks	sub-chronic	/	250 mg/kg	/	/	Number of exposures: 7 d

(j) Aspiration hazard

No information.

Symptoms related to the physical, chemical and toxicological characteristics

No information.

Interactive effects

No information.

11.2 Information on other hazards

Endocrine disrupting properties

No information.

Other information

No information.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Acute (short-term) toxicity

For components

Name	Type	value	Exposure time	Species	organism	Method	Remark
bis-[4-(2,3-epoxypropoxy)phenyl]propane	LC_{50}	1.5 mg/L	96 h	fish	*Oncorhynchus mykiss*	OECD 203 OECD 203	Static system, Fresh water
bis-[4-(2,3-epoxypropoxy)phenyl]propane	EC_{50}	2.7 mg/L	48 h	crustacea	*Daphnia magna*	/	Static system, Fresh water
bis-[4-(2,3-epoxypropoxy)phenyl]propane	EL_{50}	9.4 mg/L	72 h	algae	*Selenastrum capricornutum*	EPA 660/3-75/009 EPA 660/3-75/009	Static system, Fresh water
bis-[4-(2,3-epoxypropoxy)phenyl]propane	IC_{50}	> 100 mg/L	3 h	bacteria	Activated sludge	/	Static system, Fresh water
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	LL_{50}	> 100 mg/L	96 h	fish	*Oncorhynchus mykiss*	OECD 203	Semi-static system
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	EL_{50}	7.2 mg/L	48 h	crustacea	*Daphnia magna*	OECD 202	Static system, Fresh water
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	IC_{50}	843.75 mg/L	72 h	algae	*Selenastrum capricornutum*	OECD 201	static system
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	EC_{50}	> 100 mg/L	3 h	bacteria	Activated sludge	OECD 209	Static system, Fresh water
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	LC_{50}	2.54 mg/L	96 h	fish	/	/	calculated value
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	EC_{50}	2.55 mg/L	48 h	crustacea	*Daphnia magna*	/	calculated value

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	EC_{50}	1.8 mg/L	72 h	algae	*Selenastrum capricornutum*	OECD 201	Static system, Fresh water
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	IC_{50}	> 100 mg/L	3 h	bacteria	Activated sludge	/	Static system, Fresh water

Chronic (long-term) toxicity

For components

Name	Type	value	Exposure time	Species	organism	Method	Remark
bis-[4-(2,3-epoxypropoxy)phenyl]propane	NOEC	0.3 mg/l	21 days	crustacea	*Daphnia magna*	OECD 211	semi-static, fresh water
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	NOEC	0.3 mg/l	21 days	crustacea	*Daphnia magna*	OECD 211	semi-static, fresh water

12.2 Persistence and degradability

Abiotic degradation, physical- and photo-chemical elimination

For components

Name	Environment	Type / Method	Half Time	Evaluation	Method	Remark
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Fresh-water	hydrolysis	7.1 days	50%	half-life, OECD 111	25°C; pH 9
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Fresh-water	hydrolysis	3.58 days	50%	half-life, OECD 111	25°C; pH 7
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Fresh-water	hydrolysis	4.83 days	50%	half-life	25°C; pH 4

Biodegradation

For components

Name	Type	Rate	Time	Evaluation	Method	Remark
bis-[4-(2,3-epoxypropoxy)phenyl]propane	biodegradability	5 %	28 days	not readily biodegradable	OECD 301 F	Concentration: 20 mg/l; Inoculum: sewage (STP effluent)
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	aerobic	87 %	28 days	readily biodegradable	OECD 301 F	activated sludge; concentration: 100 mg/l
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	biodegradability	ca. 0 %	28 days	Non-biodegradable.	67/548/EEC Anex V, C.4.E	Concentration: 3 mg/l; activated sludge

12.3 Bioaccumulative potential

Partition coefficient

For components

Name	Media	value	Temperature °C	pH	Concentration	Method
bis-[4-(2,3-epoxypropoxy)phenyl]propane	octanol-water (log Kow)	3.242	25	7.1	/	OECD 117
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	Octanol-water (log Pow)	3.77	20	/	/	OECD 107
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	Log Pow	2.7 - 3.6	/	/	/	OECD 117

Bioconcentration factor (BCF)

For components

Name	Species	organism	value	Duration	Evaluation	Method	Remark
bis-[4-(2,3-epoxypropoxy)phenyl]propane	BCF	/	31	/	Does not bioaccumulate.	/	/
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	BCF	fish	150	/	/	/	/
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	bioaccumulation	/	/	/	Bioaccumulation is not expected.	/	/

12.4 Mobility in soil

Known or predicted distribution to environmental compartments

No information.

Surface tension

No information.

Adsorption/Desorption

For components

Name	Type	Criterion	value	Evaluation	Method	Remark
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Soil	/	445	/	/	Koc
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	Soil	/	4460	/	OECD 121	Koc

12.5 Results of PBT and vPvB assessment

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.

12.6 Endocrine disrupting properties

No information.

12.7 Other adverse effects

No information.

12.8 Additional information

For product

Toxic to aquatic organisms: may cause long-term adverse effects in the aquatic environment. Do not allow to reach ground water, water courses or sewage system.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product / Packaging disposal

Waste chemical

Disposal must be made according to official regulations: deliver it to authorised collector/remover/transformer of hazardous waste. Do not allow product to reach drains/sewage systems. Dispose of in accordance with applicable waste disposal regulation.

Waste codes / waste designations according to LoW

No information.

Packaging

Deliver completely emptied containers to approved waste disposal authorities. Uncleaned containers are classified as hazardous waste - they should be handled in the same manner as the contents. Empty containers are suitable for reuse after proper cleaning. Dispose of in accordance with applicable waste disposal regulation.

Waste codes / waste designations according to LoW

No information.

Waste treatment-relevant information

No information.

Sewage disposal-relevant information

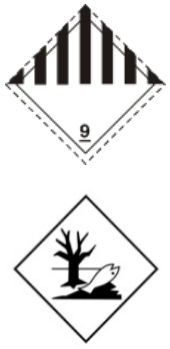
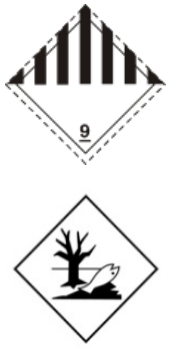
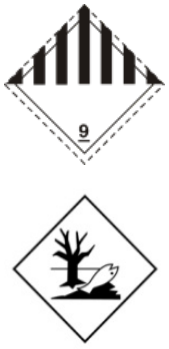
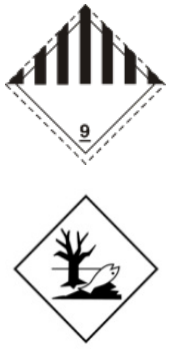
No information.

Other disposal recommendations

No information.

SECTION 14: TRANSPORT INFORMATION

ADR/RID	IMDG	IATA	ADN
14.1 UN number or ID number			
UN 3082	UN 3082	UN 3082	UN 3082
14.2 UN proper shipping name			
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis-[4-(2,3-epoxypropoxy)phenyl]propane, Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis-[4-(2,3-epoxypropoxy)phenyl]propane, Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis-[4-(2,3-epoxypropoxy)phenyl]propane, Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis-[4-(2,3-epoxypropoxy)phenyl]propane, Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol)
14.3 Transport hazard class(es)			
9	9	9	9

			
14.4 Packing group			
III	III	III	III
14.5 Environmental hazards			
YES	Marine pollutant	YES	YES
14.6 Special precautions for user			
Limited quantities 5 L Special provisions 274, 335, 375, 601 Packing Instructions P001, IBC03, LP01, R001 Special packing provisions PP1 Transport category 3 Tunnel restriction code (-)	Limited quantities 5 L EmS F-A, S-F Flash point°C	Limited Quantity, Packing Instructions (Ltd Qty, Pkg Inst) Y964 Limited Quantity, Maximum Net Quantity/Package (Ltd Qty, Max Net Qty/Pkg) 30 kg G Packing Instructions (Pkg Inst) 964 Maximum Net Quantity/Package (Max Net Qty/Pkg) 450 L Cargo Aircraft Only, Packing Instructions (CAO, Pkg Inst) 964 Cargo Aircraft Only, Maximum Net Quantity/Package (CAO, Max Net Qty/Pkg) 450 L Special provisions A97, A158, A197 Excepted quantities E1 ERG code 9L	Limited quantities 5 L
14.7 Maritime transport in bulk according to IMO instruments			
	Goods may not be carried in bulk in bulk containers, containers or vehicles.		

SECTION 15: REGULATORY INFORMATION

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

- Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (including last amendment Commission Regulation (EU) 2020/878)

- Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

Information according 2004/42/EC about limitation of emissions of volatile organic compounds (VOC-guideline)
not applicable

Regulation EC 648/2004 on detergents
No information.

Special instructions
On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: OTHER INFORMATION

Indication of changes
2.2 Label elements 8.2 Exposure controls 9.1 Information on basic physical and chemical properties

Key literature references and sources for data
No information.

Abbreviations and acronyms
ATE - Acute Toxicity Estimate
ADR - Agreement concerning the International Carriage of Dangerous Goods by Road
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
CEN - European Committee for Standardisation
C&L - Classification and Labelling
CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
CAS# - Chemical Abstracts Service number
CMR - Carcinogen, Mutagen, or Reproductive Toxicant
CSA - Chemical Safety Assessment
CSR - Chemical Safety Report
DMEL - Derived Minimal Effect Level
DNEL - Derived No Effect Level
DPD - Dangerous Preparations Directive 1999/45/EC
DSD - Dangerous Substances Directive 67/548/EEC
DU - Downstream User
EC - European Community
ECHA - European Chemicals Agency
EC-Number - EINECS and ELINCS Number (see also EINECS and ELINCS)
EEA - European Economic Area (EU + Iceland, Liechtenstein and Norway)
EEC - European Economic Community
EINECS - European Inventory of Existing Commercial Substances
ELINCS - European List of notified Chemical Substances
EN - European Standard
EQS - Environmental Quality Standard
EU - European Union
Euphrac - European Phrase Catalogue
EWC - European Waste Catalogue (replaced by LoW – see below)
GES - Generic Exposure Scenario
GHS - Globally Harmonized System
IATA - International Air Transport Association
ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG - International Maritime Dangerous Goods
IMSBC - International Maritime Solid Bulk Cargoes
IT - Information Technology
IUCLID - International Uniform Chemical Information Database
IUPAC - International Union for Pure Applied Chemistry

JRC - Joint Research Centre
Kow - octanol-water partition coefficient
LC50 - Lethal Concentration to 50 % of a test population
LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)
LE - Legal Entity
LoW - List of Wastes (see http://ec.europa.eu/environment/waste/framework/list.htm)
LR - Lead Registrant
M/I - Manufacturer / Importer
MS - Member States
MSDS - Material Safety Data Sheet
OC - Operational Conditions
OECD - Organization for Economic Co-operation and Development
OEL - Occupational Exposure Limit
OJ - Official Journal
OR - Only Representative
OSHA - European Agency for Safety and Health at work
PBT - Persistent, Bioaccumulative and Toxic substance
PEC - Predicted Effect Concentration
PNEC(s) - Predicted No Effect Concentration(s)
PPE - Personal Protection Equipment
(Q)SAR - Qualitative Structure Activity Relationship
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
RIP - REACH Implementation Project
RMM - Risk Management Measure
SCBA - Self-Contained Breathing Apparatus
SDS - Safety data sheet
SIEF - Substance Information Exchange Forum
SME - Small and Medium sized Enterprises
STOT - Specific Target Organ Toxicity
(STOT) RE - Repeated Exposure
(STOT) SE - Single Exposure
SVHC - Substances of Very High Concern
UN - United Nations
vPvB - Very Persistent and Very Bioaccumulative

List of relevant H phrases

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

The information of this SDS is based on the present state of our knowledge and meets the requirements of EU and national laws. The user's working conditions however, are beyond our knowledge and control. The product is not to be used for purposes other than those specified under section 1 without a written permission. It remains the responsibility of the user to ensure that the necessary steps are taken to meet the laws and regulations. Handling of the product may only be done by people above 18 years of age, who are satisfactorily informed of how to do the work, the hazardous properties and

necessary safety precautions. The information given in this SDS is to describe the product only in terms of health and safety requirements and should not, therefore, be construed as guaranteeing specific properties.