SAFETY DATA SHEET

CALDOFIX-2 RESIN

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

1.1 Product identifier

Product name : CALDOFIX-2 RESIN

UFI : WM13-50VJ-M00F-T8HN

Cat. No. : 40200085, 50209126

Container size : 1 l

Product type : Liquid.

Other means of identification : Not available.

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

Product use : For embedding and impregnation of materialographic specimens

Area of application : Professional applications.

Uses advised against
None identified.

1.3 Details of the supplier of the safety data sheet

Struers ApS
Pederstrupvej 84
DK-2750 Ballerup

Telephone: +45 44 600 800

e-mail address of person responsible for this SDS : sdsquestions@struers.dk

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : 2122 4071

Supplier

Telephone number : +45 44 600 800 (Only during office hours)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Skin Irrit. 2, H315
Eye Dam. 1, H318
Skin Sens. 1, H317
Muta. 2, H341 (oral)
Aquatic Chronic 2, H411

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

SECTION 2: Hazards identification

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H341 - Suspected of causing genetic defects. (oral)
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : P280 - Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection.
P273 - Avoid release to the environment.

Response : P391 - Collect spillage.
P305 + P351 + P338, P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Not applicable.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients : bis-[4-(2,3-epoxipropoxi)phenyl]propane
2,3-epoxypropyl neodecanoate
2-Propenoic acid, reaction products with pentaerythritol hexamethylene diacrylate

Supplemental label elements : Contains epoxy constituents. May produce an allergic reaction.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 2: Hazards identification

Product meets the criteria for endocrine disrupting properties according to Regulation (EC) No. 1907/2006. : No.

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
bis-[4-(2,3-epoxipropoxi) phenyl]propane	REACH #: 01-2119456619-26 EC: 216-823-5 CAS: 1675-54-3 Index: 603-073-00-2	≥50 - ≤75	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411	Skin Irrit. 2, H315: C ≥ 5% Eye Irrit. 2, H319: C ≥ 5%	[1]
2,3-epoxypropyl neodecanoate	REACH #: 01-2119431597-33 EC: 247-979-2 CAS: 26761-45-5 Index: 607-770-00-2	≥25 - ≤50	Skin Sens. 1A, H317 Muta. 2, H341 (oral) Aquatic Chronic 2, H411	Skin Sens. 1, H317: C ≥ 0.001%	[1]
2-Propenoic acid, reaction products with pentaerythritol	REACH #: 01-2119490003-49 CAS: 1245638-61-2	≤5	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 2, H411	ATE [Oral] = 540 mg/kg	[1]
hexamethylene diacrylate	REACH #: 01-2119484737-22 EC: 235-921-9 CAS: 13048-33-4 Index: 607-109-00-8	≤3	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 2, H411 **See Section 16 for the full text of the H statements declared above.**	M [Acute] = 1	[1]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

4.3 Indication of any immediate medical attention and special treatment needed

SECTION 4: First aid measures

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : In case of fire, use water spray (fog), foam, dry chemical or CO_2. Cool closed containers exposed to fire with water.

Unsuitable extinguishing media : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and material for containment and cleaning up

SECTION 6: Accidental release measures

Small spill : Stop leak if without risk. Move containers from spill area. Dispose of via a licensed waste disposal contractor. Absorb spill with inert material (e.g. dry sand or earth) and place in a chemical waste container.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Seveso Directive - Reporting thresholds (in tonnes)

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
E2	200 tonnes	500 tonnes

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Biological exposure indices

No exposure indices known.

Recommended monitoring procedures : Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Result	
bis-[4-(2,3-epoxipropoxi)phenyl] propane	**DNEL - Workers - Short term - Dermal** 8.3 mg/kg bw/day	Effects: Systemic
	DNEL - Workers - Short term - Inhalation 12.3 mg/m³	Effects: Systemic
	DNEL - Workers - Long term - Dermal 8.3 mg/kg bw/day	Effects: Systemic
	DNEL - Workers - Long term - Inhalation 12.3 mg/m³	Effects: Systemic
	DNEL - General population - Short term - Dermal 3.6 mg/kg bw/day	Effects: Systemic
	DNEL - General population - Short term - Inhalation 0.75 mg/m³	Effects: Systemic
	DNEL - General population - Short term - Oral 0.75 mg/kg bw/day	Effects: Systemic
	DNEL - General population - Long term - Dermal 3.6 mg/kg bw/day	Effects: Systemic
	DNEL - General population - Long term - Inhalation 0.75 mg/m³	Effects: Systemic

SECTION 8: Exposure controls/personal protection

	DNEL - General population - Long term - Oral 0.75 mg/kg bw/day	Effects: Systemic
	DNEL - General population - Long term - Dermal 89.3 µg/kg bw/day	Effects: Systemic
	DNEL - General population - Long term - Oral 0.5 mg/kg bw/day	Effects: Systemic
	DNEL - Workers - Long term - Dermal 0.75 mg/kg bw/day	Effects: Systemic
	DNEL - General population - Long term - Inhalation 0.87 mg/m³	Effects: Systemic
	DNEL - Workers - Long term - Inhalation 4.93 mg/m³	Effects: Systemic
2,3-epoxypropyl neodecanoate	**DNEL - General population - Long term - Dermal** 2.5 mg/kg bw/day	Effects: Systemic
	DNEL - General population - Long term - Inhalation 4 mg/m³	Effects: Systemic
	DNEL - Workers - Long term - Dermal 4.2 mg/kg bw/day	Effects: Systemic
	DNEL - Workers - Long term - Inhalation 5.88 mg/m³	Effects: Systemic
	DNEL - General population - Long term - Oral 2.5 mg/kg bw/day	Effects: Systemic
hexamethylene diacrylate	**DNEL - General population - Long term - Dermal** 1.66 mg/kg bw/day	Effects: Systemic
	DNEL - General population - Long term - Oral 2.1 mg/kg bw/day	Effects: Systemic
	DNEL - Workers - Long term - Dermal 2.77 mg/kg bw/day	Effects: Systemic
	DNEL - General population - Long	Effects: Systemic

SECTION 8: Exposure controls/personal protection

term - Inhalation
7.2 mg/m³

DNEL - Workers - Long term - Inhalation
24.5 mg/m³

Effects: Systemic

PNECs

Product/ingredient name	Result
bis-[4-(2,3-epoxipropoxi)phenyl] propane	**Fresh water** 6 µg/l **Marine water** 1 µg/l **Sewage Treatment Plant** 10 mg/l **Fresh water sediment** 0.341 mg/kg dwt **Marine water sediment** 0.034 mg/kg dwt **Soil** 0.065 mg/kg dwt
2,3-epoxypropyl neodecanoate	**Fresh water** 0.0035 mg/l **Marine water** 0.35 µg/l **Sewage Treatment Plant** 50 mg/l
2-Propenoic acid, reaction products with pentaerythritol	**Fresh water** 0.0032 mg/l **Marine water** 0.00032 mg/l **Sewage Treatment Plant** 10 mg/l **Fresh water sediment** 1.73 mg/kg dwt **Marine water sediment** 0.173 mg/kg dwt **Soil** 0.34 mg/kg dwt
hexamethylene diacrylate	**Soil** 0.094 mg/kg dwt

SECTION 8: Exposure controls/personal protection

Fresh water sediment
0.0493 mg/kg dwt

Fresh water
0.007 mg/l

Marine water
0.001 mg/l

Sewage Treatment Plant
2.7 mg/l

Marine water sediment
0.049 mg/kg dwt

8.2 Exposure controls

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Recommended: Butyl rubber gloves. The breakthrough time must be greater than the end use time of the product.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

SECTION 8: Exposure controls/personal protection

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid.

Colour : Clear. Yellowish.

Odour : Slight

Odour threshold : Not available.

Melting point/freezing point : Not available.

Boiling point or initial boiling point and boiling range : Not available.

Flammability : Not available.

Lower and upper explosion limit : Not available.

Flash point : Closed cup: 110°C

Auto-ignition temperature :

Ingredient name	°C	Method
2,3-epoxypropyl neodecanoate	276	EU A.15

Decomposition temperature : Not available.

pH : Not applicable.

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): 628 to 673 mm^2/s
Kinematic (40°C): Not available.

Solubility :

Media	Result
water	Not soluble

Solubility in water : Not available.

Partition coefficient n-octanol/water (log Pow) : Not applicable.

Vapour pressure :

Ingredient name	Vapour Pressure at 20˚C			Vapour pressure at 50˚C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
2,3-epoxypropyl neodecanoate	0.11251	0.015				

Relative density : 1.13

Relative vapour density : Not available.

SECTION 9: Physical and chemical properties

Particle characteristics

Median particle size : Not applicable.

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Explosive properties : Not available.

Oxidising properties : Not available.

9.2.2 Other safety characteristics

Miscible with water : No.

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.

10.4 Conditions to avoid : No specific data.

10.5 Incompatible materials : Reactive or incompatible with the following materials: oxidising materials and alkalis.

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity

Product/ingredient name	Result	
bis-[4-(2,3-epoxipropoxi)phenyl] propane	**Rabbit - Dermal - LD50** 20 g/kg	Toxic effects: Behavioral - Somnolence (general depressed activity) Gastrointestinal - Hypermotility, diarrhea Gross Metabolite Changes - Weight loss or decreased weight gain
	Rat - Oral - LD50 11400 mg/kg	
2,3-epoxypropyl neodecanoate	**Rat - Male, Female - Oral - LD50** >9700 mg/kg	
	Rat - Dermal - LD50 >3900 mg/kg	

SECTION 11: Toxicological information

2-Propenoic acid, reaction products with pentaerythritol	**Rat - Oral - LD50** 540 mg/kg	OECD 401 [Acute Oral Toxicity]
	Rabbit - Dermal - LD50 >2000 mg/kg	OECD 402 [Acute Dermal Toxicity]
hexamethylene diacrylate	**Rabbit - Dermal - LD50** 3650 mg/kg	OECD 402 [Acute Dermal Toxicity]
	Rat - Oral - LD50 >5000 mg/kg	OECD 401 [Acute Oral Toxicity]
	Rat - Inhalation - LC50 Dusts and mists 0.41 mg/l [7 hours]	

Conclusion/Summary [Product] : Not available.

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
CALDOFIX-2 RESIN	14970.0	N/A	N/A	N/A	N/A
bis-[4-(2,3-epoxipropoxi)phenyl]propane	11400	20000	N/A	N/A	N/A
2-Propenoic acid, reaction products with pentaerythritol	540	N/A	N/A	N/A	N/A
hexamethylene diacrylate	N/A	3650	N/A	N/A	N/A

Skin corrosion/irritation

Product/ingredient name	Result	
bis-[4-(2,3-epoxipropoxi)phenyl] propane	**Rabbit - Skin - Moderate irritant** Duration of treatment/exposure: 24 hours	
	Rabbit - Skin - Severe irritant Duration of treatment/exposure: 24 hours	
	Rabbit - Skin - Erythema/Eschar Irritation score: 1.5 to 2	OECD 404 [Acute Dermal Irritation/ Corrosion]
	Rabbit - Skin - Oedema Irritation score: 1 to 1.5	OECD 404 [Acute Dermal Irritation/ Corrosion]
2,3-epoxypropyl neodecanoate	**Rabbit - Skin - Primary dermal irritation index (PDII)** Duration of treatment/exposure: 4 hours Irritation score: 0.7	Observation period: 72 hours OECD 404 [Acute Dermal Irritation/ Corrosion]
2-Propenoic acid, reaction products with pentaerythritol	**Rabbit - Skin - Irritant**	OECD 404 [Acute Dermal Irritation/ Corrosion]

SECTION 11: Toxicological information

hexamethylene diacrylate	**Rabbit - Skin - Severe irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 500 mg	

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name	Result	
bis-[4-(2,3-epoxipropoxi)phenyl] propane	**Rabbit - Eyes - Irritant**	OECD 405 [Acute Eye Irritation/ Corrosion]
	Rabbit - Eyes - Redness of the conjunctivae Irritation score: 0.7	
2,3-epoxypropyl neodecanoate	**Rabbit - Eyes - Redness of the conjunctivae** Irritation score: 0.7	Observation period: 72 hours OECD 405 [Acute Eye Irritation/ Corrosion]
2-Propenoic acid, reaction products with pentaerythritol	**Rabbit - Eyes - Severe irritant**	OECD 405 [Acute Eye Irritation/ Corrosion]
hexamethylene diacrylate	**Rabbit - Eyes - Irritant**	OECD 405 [Acute Eye Irritation/ Corrosion]

Conclusion/Summary [Product] : Not available.

Respiratory corrosion/irritation

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Product/ingredient name	Result	
bis-[4-(2,3-epoxipropoxi)phenyl] propane	**Guinea pig - skin** Result: Sensitising	OECD 406 [Skin Sensitization]
	Mouse - skin Result: Sensitising	OECD 429 [Skin Sensitization: Local Lymph Node Assay]
2,3-epoxypropyl neodecanoate	**Guinea pig - skin** Result: Sensitising	OECD 406 [Skin Sensitization]
hexamethylene diacrylate	**Guinea pig - skin** Result: Sensitising	OECD 406 [Skin Sensitization]

Skin

Conclusion/Summary [Product] : Not available.

Respiratory

Conclusion/Summary [Product] : Not available.

SECTION 11: Toxicological information

Germ cell mutagenicity

Product/ingredient name	Result	
bis-[4-(2,3-epoxipropoxi)phenyl] propane	**Mammalian-Animal** >3000 mg/kg [5 days] Result: Negative	
2,3-epoxypropyl neodecanoate	**In vivo - Mammalian-Animal** Result: Positive	
2-Propenoic acid, reaction products with pentaerythritol	**In vitro - Mammalian-Animal** Result: Negative	OECD 476 [In vitro Mammalian Cell Gene Mutation Test]
	In vitro - Bacteria Result: Negative	OECD 471 [Bacterial Reverse Mutation Test]
	In vivo - Mammalian-Animal Result: Negative	OECD 474 [Mammalian Erythrocyte Micronucleus Test]
hexamethylene diacrylate	**In vitro - Bacteria** Result: Negative	OECD 471 [Bacterial Reverse Mutation Test]
	In vitro - Mammalian-Animal Result: Negative	OECD 476 [In vitro Mammalian Cell Gene Mutation Test]
	In vivo - Mammalian-Animal Result: Negative	OECD 474 [Mammalian Erythrocyte Micronucleus Test]

Conclusion/Summary [Product] : Not available.

Carcinogenicity

Product/ingredient name	Result	
bis-[4-(2,3-epoxipropoxi)phenyl] propane	**Rat - Oral - TC** 100 mg/kg [24 hours] Result: Negative	OECD 453 [Combined Chronic Toxicity/Carcinogenicity Studies]
	Mouse - Male - Dermal - TC 100 mg/kg [24 hours] Result: Negative	OECD 453 [Combined Chronic Toxicity/Carcinogenicity Studies]
	Rat - Female - Dermal - TC 1000 mg/kg [24 hours] Result: Negative	OECD 453 [Combined Chronic Toxicity/Carcinogenicity Studies]

Conclusion/Summary [Product] : Not available.

Reproductive toxicity

Product/ingredient name	Result

SECTION 11: Toxicological information

bis-[4-(2,3-epoxipropoxi)phenyl] propane	**Rabbit - Oral** Developmental: Negative	
2-Propenoic acid, reaction products with pentaerythritol	**Rat - Oral** 200 mg/kg - NOAEL Fertility effects: Negative	OECD 422 [Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test]
	Rabbit - Oral 75 mg/kg - NOAEL Maternal toxicity: Negative Developmental: Negative	OECD 414 [Prenatal Developmental Toxicity Study]
hexamethylene diacrylate	**Rat - Oral** 750 mg/kg - NOAEL Fertility effects: Negative	OECD 422 [Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test]
	Rat - Oral <750 mg/kg - NOAEL Maternal toxicity: Negative Developmental: Negative	OECD 414 [Prenatal Developmental Toxicity Study]

Conclusion/Summary [Product] : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : No specific data.

SECTION 11: Toxicological information

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name	Result	
2,3-epoxypropyl neodecanoate	**Chronic - Rat - Oral - NOAEL** 100 mg/kg [7 days per week] [90 days]	OECD 408 [Repeated Dose 90-Day Oral Toxicity Study in Rodents]
2-Propenoic acid, reaction products with pentaerythritol	**Chronic - Rat - Oral - NOAEL** 75 mg/kg [4 weeks]	OECD 422 [Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test]
	Chronic - Rat - Oral - LOAEL 200 mg/kg [4 weeks]	OECD 422 [Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test]
	Chronic - Rabbit - Dermal - NOAEL 12 mg/kg [3 months]	OECD 411 [Subchronic Dermal Toxicity: 90-day Study]
hexamethylene diacrylate	**Chronic - Rat - Oral - NOAEL** 250 mg/kg [7 weeks]	Toxic effects: liver OECD 422 [Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test]

Conclusion/Summary [Product] : Not available.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : Suspected of causing genetic defects if swallowed.

Reproductive toxicity : No known significant effects or critical hazards.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

SECTION 11: Toxicological information

Conclusion/Summary [Product] : The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	
bis-[4-(2,3-epoxipropoxi)phenyl] propane	**Acute - LC50** Fish 1.3 mg/l [96 hours]	OECD 203 [Fish, Acute Toxicity Test]
	Acute - EC50 Daphnia - *water Flea* 2.1 mg/l [48 hours]	OECD 202 [Daphnia sp. Acute Immobilization Test and Reproduction Test]
	Acute - EC50 Algae >11 mg/l [72 hours]	
	Chronic - NOEC Daphnia - *water Flea* 0.3 mg/l [21 days]	OECD 211 [Daphnia Magna Reproduction Test]
2,3-epoxypropyl neodecanoate	**Acute - EC50 - Fresh water** Daphnia - *Daphnia magna* 4.8 mg/l [48 hours]	OECD [Daphnia sp. Acute Immobilization Test and Reproduction Test]
	Acute - LC50 Fish - *Rainbow trout* 9.6 mg/l [96 hours]	OECD 203 [Fish, Acute Toxicity Test]
	Acute - EC50 Algae 3.5 mg/l [96 hours]	OECD 201 [Alga, Growth Inhibition Test]
2-Propenoic acid, reaction products with pentaerythritol	**Acute - LC50 - Fresh water** Fish - *Cyprinus carpio* 3.2 mg/l [96 hours]	OECD 203 [Fish, Acute Toxicity Test]
	Acute - EC50 Algae - *Pseudokirchneriella subcapitata* 12 mg/l [96 hours]	OECD 201 [Alga, Growth Inhibition Test]
	Acute - EC50 Micro-organism >100 mg/l [3 hours]	OECD 209 [Activated Sludge, Respiration Inhibition Test]
	Acute - NOEC Algae - *Pseudokirchneriella subcapitata* 0.31 mg/l [96 hours]	OECD 201 [Alga, Growth Inhibition Test]

SECTION 12: Ecological information

hexamethylene diacrylate	**Acute - EC50 - Fresh water** Daphnia - *Daphnia magna* 2.7 mg/l [48 hours]	OECD [Daphnia sp. Acute Immobilization Test and Reproduction Test]
	Acute - NOEC - Fresh water Daphnia - *Daphnia magna* 1.8 mg/l [48 hours]	OECD [Daphnia sp. Acute Immobilization Test and Reproduction Test]
	Acute - EC50 Micro-organism 270 mg/l [30 minutes]	OECD 209 [Activated Sludge, Respiration Inhibition Test]
	Acute - LC50 Fish - *Oryzias latipes* 0.38 mg/l [96 hours]	OECD 203 [Fish, Acute Toxicity Test]
	Acute - NOEC Algae 0.9 mg/l [72 hours]	
	Chronic - NOEC Fish - *Oryzias latipes* 0.072 mg/l [39 days]	OECD 210 [Fish, Early-Life Stage Toxicity Test]
	Acute - EC50 Algae - *Pseudokirchneriella subcapitata* 2.33 mg/l [72 hours]	OECD 201 [Alga, Growth Inhibition Test]

Conclusion/Summary [Product] : Not available.

12.2 Persistence and degradability

Product/ingredient name	**Result**	
bis-[4-(2,3-epoxipropoxi)phenyl] propane	6 to 12% [28 days] - Not readily	OECD 301F [Ready Biodegradability - Manometric Respirometry Test]
2,3-epoxypropyl neodecanoate	**Aerobic** 7 to 8% [28 days] - Not readily	OECD 301D [Ready Biodegradability - Closed Bottle Test]
2-Propenoic acid, reaction products with pentaerythritol	**Aerobic - 21 mg/l** 14% [28 days] - Not readily	OECD 301B [Ready Biodegradability - CO2 Evolution Test]
	50% [28 days]	OECD 301D [Ready Biodegradability - Closed Bottle Test]
	72% [60 days]	OECD 301D [Ready Biodegradability - Closed Bottle Test]
hexamethylene diacrylate	**Aerobic** 60 to 70% [28 days] - Readily	OECD 310 [Ready Biodegradability - CO2 in Sealed Vessels (Headspace Test)]

Conclusion/Summary [Product] : Not available.

SECTION 12: Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
bis-[4-(2,3-epoxipropoxi) phenyl]propane	-	-	Not readily
2,3-epoxypropyl neodecanoate	-	-	Not readily
2-Propenoic acid, reaction products with pentaerythritol	-	-	Not readily
hexamethylene diacrylate	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
bis-[4-(2,3-epoxipropoxi) phenyl]propane	2.64 to 3.78	3 to 31	Low
2,3-epoxypropyl neodecanoate	4.4	-	High
2-Propenoic acid, reaction products with pentaerythritol	1.45	-	Low
hexamethylene diacrylate	2.81	-	Low

12.4 Mobility in soil

Soil/water partition coefficient

Product/ingredient name	logKoc	Koc
bis-[4-(2,3-epoxipropoxi)phenyl]propane	4	10465.7
2,3-epoxypropyl neodecanoate	0.41	2.6
2-Propenoic acid, reaction products with pentaerythritol	≤0.57	≤3.73
hexamethylene diacrylate	2.5	332.947

Results of PMT and vPvM assessment

Product/ingredient name	PMT	P	M	T	vPvM	vP	vM
bis-[4-(2,3-epoxipropoxi) phenyl]propane	No	N/A	No	No	No	N/A	No
2,3-epoxypropyl neodecanoate	No	N/A	Yes	No	N/A	N/A	Yes
2-Propenoic acid, reaction products with pentaerythritol	No	N/A	Yes	No	N/A	N/A	Yes
hexamethylene diacrylate	No	N/A	Yes	No	No	N/A	No

Mobility : Not available.

Conclusion/Summary : The product does not meet the criteria to be considered as a PMT or vPvM.

12.5 Results of PBT and vPvB assessment

Regulation (EC) No. 1907/2006 [REACH]

SECTION 12: Ecological information

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
bis-[4-(2,3-epoxipropoxi) phenyl]propane	No	N/A	No	No	No	N/A	No
2,3-epoxypropyl neodecanoate	No	N/A	N/A	No	N/A	N/A	N/A
2-Propenoic acid, reaction products with pentaerythritol	No	N/A	N/A	No	N/A	N/A	N/A
hexamethylene diacrylate	No	N/A	N/A	No	N/A	N/A	N/A

Regulation (EC) No. 1272/2008 [CLP]

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
bis-[4-(2,3-epoxipropoxi) phenyl]propane	No	N/A	No	No	No	N/A	No
2,3-epoxypropyl neodecanoate	No	N/A	N/A	No	N/A	N/A	N/A
2-Propenoic acid, reaction products with pentaerythritol	No	N/A	N/A	No	N/A	N/A	N/A
hexamethylene diacrylate	No	N/A	N/A	No	N/A	N/A	N/A

Conclusion/Summary Regulation (EC) No. 1272/2008 [CLP] : The product does not meet the criteria to be considered as a PBT or vPvB.

12.6 Endocrine disrupting properties

Not available.

Conclusion/Summary [Product] : The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

European waste catalogue (EWC)

Waste code	Waste designation
16 05 08*	discarded organic chemicals consisting of or containing hazardous substances

Packaging

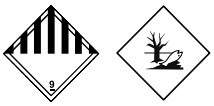
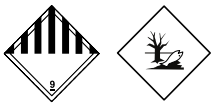
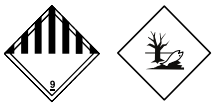
SECTION 13: Disposal considerations

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Type of packaging	European waste catalogue (EWC)	
Plastic bottles or jugs	15 01 02	plastic packaging

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number or ID number	UN3082	UN3082	UN3082	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis-[4-(2,3-epoxipropoxi) phenyl]propane, 2,3-epoxypropyl neodecanoate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis-[4-(2,3-epoxipropoxi) phenyl]propane, 2,3-epoxypropyl neodecanoate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis-[4-(2,3-epoxipropoxi) phenyl]propane, 2,3-epoxypropyl neodecanoate)	Environmentally hazardous substance, liquid, n.o.s. (bis-[4-(2,3-epoxipropoxi) phenyl]propane, 2,3-epoxypropyl neodecanoate)
14.3 Transport hazard class(es)	9 	9 	9 	9
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	Yes.	Yes.	Yes.	Yes.

Additional information

ADR/RID : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Hazard identification number 90
Limited quantity 5 L
Special provisions 274, 335, 601, 375, 650
Tunnel code (-)

ADN : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Special provisions 274, 335, 375, 601, 650

IMDG : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Emergency schedules F-A, S-F
Special provisions 274, 335, 375, 969

SECTION 14: Transport information

IATA : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.
Quantity limitation Passenger and Cargo Aircraft: 450 L. Packaging instructions: 964. Cargo Aircraft Only: 450 L. Packaging instructions: 964. Limited Quantities - Passenger Aircraft: 30 kg. Packaging instructions: Y964.
Special provisions A97, A158, A197, A215

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Maritime transport in bulk according to IMO instruments : Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Product/ingredient name	%	Designation [Usage]
CALDOFIX-2 RESIN	≥90	3

Labelling : Not applicable.

Other EU regulations

Explosive precursors : Not applicable.

Ozone depleting substances (EU 2024/590)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

Category
E2

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

SECTION 15: Regulatory information

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

15.2 Chemical safety assessment : The supplier has not performed a chemical safety assessment for the substance/ product.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms :
ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
B = Bioaccumulative
BCF = Bioconcentration Factor
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
IATA = International Air Transport Association
IMDG = International Maritime Dangerous Goods
IMO = International Maritime Organization
M = Mobile
N/A = Not available
P = Persistent
PBT = Persistent, Bioaccumulative and Toxic
PMT = Persistent, Mobile and Toxic
PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SGG = Segregation Group
T = Toxic
vB = Very Bioaccumulative
vM = Very Mobile
vP = Very Persistent
vPvB = Very Persistent and Very Bioaccumulative
vPvM = Very Persistent and Very Mobile

SECTION 16: Other information

Key literature references and sources for data : Regulation (EC) No. 1272/2008 [CLP]; European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), concluded in Geneva on 30 September 1957 plus amendments (Uniform text: Journal of Laws 27/2009 pos. 162 plus amendments); European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN); Occupational exposure limits; International regulations

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Skin Irrit. 2, H315	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method
Muta. 2, H341 (oral)	Calculation method
Aquatic Chronic 2, H411	Calculation method

Full text of abbreviated H statements

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H341	Suspected of causing genetic defects.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Muta. 2	GERM CELL MUTAGENICITY - Category 2
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1A	SKIN SENSITISATION - Category 1A

Training advice : Ensure operatives are trained to minimise exposures. Training staff on good practice.

Date of issue/ Date of revision : 20/03/2026

Date of previous issue : 13/01/2025

Version : 1.01

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.