

SAFETY DATA SHEET

CALDOFIX-2 RESIN

Section 1. Identification

Product identifier : CALDOFIX-2 RESIN
Cat. No. : 40200085, 50209126
Container size : 1 l
Other means of identification : Not available.
Product type : Liquid.

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.

Supplier's details : Struers Ltd
6200 Edwards Blvd.
Ontario
L5T 2V7 Mississauga
Canada

Telephone: +1 (905) 814 8855

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

Emergency telephone number (with hours of operation) : Alberta & NWT:
Poison & Drug Information Service (PADIS): 1-800-332-1414
British Columbia:
Drug and Poison Information Centre (DPIC): 604-682-5050 / 1-800-567-8911
Ontario:
Poison Centre: 1-800-268-9017
Québec:
Poison Control Centre: 1-800-463-5060
Infotrac:
1-800-535-5053

Section 2. Hazard identification

Classification of the substance or mixture : H315 SKIN IRRITATION - Category 2
H318 SERIOUS EYE DAMAGE - Category 1
H317 SKIN SENSITIZATION - Category 1A
H341 GERM CELL MUTAGENICITY - Category 2
H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)
(Respiratory tract irritation) - Category 3

GHS label elements

Hazard pictograms :



Signal word : Danger

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Section 2. Hazard identification

Hazard statements : H315 - Causes skin irritation.
 H317 - May cause an allergic skin reaction.
 H318 - Causes serious eye damage.
 H335 - May cause respiratory irritation.
 H341 - Suspected of causing genetic defects. (oral)

Precautionary statements

Prevention : P201 - Obtain special instructions before use.
 P202 - Do not handle until all safety precautions have been read and understood.
 P280 - Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection.
 P271 - Use only outdoors or in a well-ventilated area.
 P261 - Avoid breathing vapor.
 P264 - Wash thoroughly after handling.
 P272 - Contaminated work clothing should not be allowed out of the workplace.

Response : P308 + P313 - IF exposed or concerned: Get medical advice or attention.
 P304 + P340, P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.
 P302 + P352 - IF ON SKIN: Wash with plenty of water.
 P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.
 P362 + P364 - Take off contaminated clothing and wash it before reuse.
 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 : P405 - Store locked up.
 P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.

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

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

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

Ingredient name	Other names	% (w/w)	Identifiers
Bis-[4-(2,3-epoxipropoxy)phenyl]propane	-	≥65 - ≤85	CAS: 1675-54-3
2,3-epoxypropyl neodecanoate	-	≥30 - ≤60	CAS: 26761-45-5
2-Propenoic acid, reaction products with pentaerythritol	-	≥1 - ≤5	CAS: 1245638-61-2
hexamethylene diacrylate	-	≥1 - ≤5	CAS: 13048-33-4

Ranges if listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

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



Section 4. First-aid measures

Description of necessary 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : May cause respiratory irritation.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains

Section 4. First-aid measures

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- 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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : In case of fire, use water spray (fog), foam, dry chemical or CO₂. Cool closed containers exposed to fire with water.
- Unsuitable extinguishing media** : Do not use water jet.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

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

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.

Section 6. Accidental release measures

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 spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized 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".

Environmental precautions : Avoid dispersal of spilled 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).

Methods and materials 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 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 spilled 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.

Section 7. Handling and storage

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 vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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.
- 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Hexamethylene diacrylate	OARS WEEL (United States, 9/2024) Skin sensitizer. TWA 8 hours: 1 mg/m ³ .

Biological exposure indices

No exposure indices known.

- Appropriate engineering controls** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor 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.



Section 8. Exposure controls/personal protection

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.

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.

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.

Section 9. Physical and chemical properties

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

Appearance

Physical state : Liquid.
Color : Clear. Yellowish.
Odor : Slight
Odor threshold : Not available.
Melting point and freezing point : Not available.



Section 9. Physical and chemical properties

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

Evaporation rate : Not available.

Flammability : Not available.

Lower and upper explosion limit or lower and upper flammability limit : Not available.

Flash point : Closed cup: 110°C (230°F)

Auto-ignition temperature	Ingredient name	°C	°F	Method
	2,3-epoxypropyl neodecanoate	276	528.8	EU A.15

Decomposition temperature : Not available.

pH : Not applicable.

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): 628 to 673 mm²/s (628 to 673 cSt)
Kinematic (40°C (104°F)): Not available.

Solubility(ies)	Media	Result
	water	Not soluble

Miscible with water : No.

Partition coefficient — n-octanol/water (logarithmic value) : Not applicable.

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

Relative density : 1.13

Relative vapor density : Not available.

Particle characteristics

Median particle size : Not applicable.

Other information

Physical/chemical properties comments : No additional information.

Section 10. Stability and reactivity

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

Chemical stability : The product is stable.

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

Conditions to avoid : No specific data.



Section 10. Stability and reactivity

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

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

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	
bis-[4-(2,3-epoxipropoxy)phenyl] propane	Rabbit - Dermal - LD50 20 g/kg	<u>Toxic effects:</u> Behavioral - Somnolence (general depressed activity) Gastrointestinal - Hypermotility, diarrhea Gross Metabolite Changes - Weight loss or decreased weight gain
2,3-epoxypropyl neodecanoate	Rat - Oral - LD50 11400 mg/kg Rat - Male, Female - Oral - LD50 >9700 mg/kg Rat - Dermal - LD50 >3900 mg/kg	
2-Propenoic acid, reaction products with pentaerythritol	Rat - Oral - LD50 540 mg/kg Rabbit - Dermal - LD50 >2000 mg/kg	OECD 401 [Acute Oral Toxicity] OECD 402 [Acute Dermal Toxicity]
hexamethylene diacrylate	Rabbit - Dermal - LD50 3650 mg/kg Rat - Oral - LD50 >5000 mg/kg Rat - Inhalation - LC50 Dusts and mists 0.41 mg/l [7 hours]	OECD 402 [Acute Dermal Toxicity] OECD 401 [Acute Oral Toxicity]

Conclusion/Summary [Product] : Not available.

Skin corrosion/irritation

Product/ingredient name	Result	
bis-[4-(2,3-epoxipropoxy)phenyl] propane	Rabbit - Skin - Moderate irritant <u>Duration of treatment/exposure:</u> 24 hours Rabbit - Skin - Severe irritant <u>Duration of treatment/exposure:</u> 24 hours Rabbit - Skin - Erythema/Eschar <u>Irritation score:</u> 1.5 to 2 Rabbit - Skin - Edema <u>Irritation score:</u> 1 to 1.5	OECD 404 [Acute Dermal Irritation/Corrosion] OECD 404 [Acute Dermal Irritation/Corrosion]
2,3-epoxypropyl neodecanoate	Rabbit - Skin - Primary dermal irritation index (PDII) <u>Duration of treatment/exposure:</u> 4	<u>Observation period:</u> 72 hours OECD 404 [Acute Dermal Irritation/Corrosion]

Section 11. Toxicological information

2-Propenoic acid, reaction products
with pentaerythritol
hexamethylene diacrylate

hours
Irritation score: 0.7
Rabbit - Skin - Irritant
Rabbit - Skin - Severe irritant
Duration of treatment/exposure: 24
hours
Amount/concentration applied: 500 mg

OECD 404 [Acute Dermal Irritation/
Corrosion]

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name

 bis-[4-(2,3-epoxipropoxy)phenyl]
propane

Result

Rabbit - Eyes - Irritant

OECD 405 [Acute Eye Irritation/
Corrosion]

**Rabbit - Eyes - Redness of the
conjunctivae**

Irritation score: 0.7

**Rabbit - Eyes - Redness of the
conjunctivae**

Irritation score: 0.7

Rabbit - Eyes - Severe irritant

Observation period: 72 hours
OECD 405 [Acute Eye Irritation/
Corrosion]

OECD 405 [Acute Eye Irritation/
Corrosion]

OECD 405 [Acute Eye Irritation/
Corrosion]

2,3-epoxypropyl neodecanoate

2-Propenoic acid, reaction products
with pentaerythritol
hexamethylene diacrylate

Rabbit - Eyes - Irritant

Conclusion/Summary [Product] : Not available.

Respiratory corrosion/irritation

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Product/ingredient name

 bis-[4-(2,3-epoxipropoxy)phenyl]
propane

Result

Guinea pig - skin

Result: Sensitizing

Mouse - skin

Result: Sensitizing

Guinea pig - skin

Result: Sensitizing

Guinea pig - skin

Result: Sensitizing

OECD 406 [Skin Sensitization]

OECD 429 [Skin Sensitization: Local
Lymph Node Assay]

OECD 406 [Skin Sensitization]

OECD 406 [Skin Sensitization]

2,3-epoxypropyl neodecanoate

hexamethylene diacrylate

Skin

Conclusion/Summary [Product] : Not available.

Respiratory

Conclusion/Summary [Product] : Not available.

Section 11. Toxicological information

Germ cell mutagenicity

Product/ingredient name

bis-[4-(2,3-epoxipropoxy)phenyl]
propane

2,3-epoxypropyl neodecanoate

2-Propenoic acid, reaction products
with pentaerythritol

hexamethylene diacrylate

Result

Mammalian-Animal

>3000 mg/kg [5 days]

Result: Negative

In vivo - Mammalian-Animal

Result: Positive

In vitro - Mammalian-Animal

Result: Negative

In vitro - Bacteria

Result: Negative

In vivo - Mammalian-Animal

Result: Negative

In vitro - Bacteria

Result: Negative

In vitro - Mammalian-Animal

Result: Negative

In vivo - Mammalian-Animal

Result: Negative

OECD 476 [In vitro Mammalian Cell
Gene Mutation Test]

OECD 471 [Bacterial Reverse
Mutation Test]

OECD 474 [Mammalian Erythrocyte
Micronucleus Test]

OECD 471 [Bacterial Reverse
Mutation Test]

OECD 476 [In vitro Mammalian Cell
Gene Mutation Test]

OECD 474 [Mammalian Erythrocyte
Micronucleus Test]

Conclusion/Summary [Product]

: Not available.

Carcinogenicity

Product/ingredient name

bis-[4-(2,3-epoxipropoxy)phenyl]
propane

Result

Rat - Oral - TC

100 mg/kg [24 hours]

Result: Negative

Mouse - Male - Dermal - TC

100 mg/kg [24 hours]

Result: Negative

Rat - Female - Dermal - TC

1000 mg/kg [24 hours]

Result: Negative

OECD 453 [Combined Chronic
Toxicity/Carcinogenicity Studies]

OECD 453 [Combined Chronic
Toxicity/Carcinogenicity Studies]

OECD 453 [Combined Chronic
Toxicity/Carcinogenicity Studies]

Conclusion/Summary [Product]

: Not available.

Classification

Product/ingredient name	IARC	NTP	ACGIH
bis-[4-(2,3-epoxipropoxy)phenyl]propane	3	-	-

Reproductive toxicity

Product/ingredient name

bis-[4-(2,3-epoxipropoxy)phenyl]
propane

2-Propenoic acid, reaction products
with pentaerythritol

Result

Rabbit - Oral

Developmental: Negative

Rat - Oral

200 mg/kg - NOAEL

Fertility effects: Negative

Rabbit - Oral

OECD 422 [Combined Repeated
Dose Toxicity Study with the
Reproduction/Developmental Toxicity
Screening Test]

OECD 414 [Prenatal Developmental

Section 11. Toxicological information

hexamethylene diacrylate	75 mg/kg - NOAEL	Toxicity Study]
	<u>Maternal toxicity</u> : Negative	
	<u>Developmental</u> : Negative	
	Rat - Oral	
	750 mg/kg - NOAEL	OECD 422 [Combined Repeated
	<u>Fertility effects</u> : Negative	Dose Toxicity Study with the
		Reproduction/Developmental Toxicity
		Screening Test]
	Rat - Oral	OECD 414 [Prenatal Developmental
	<750 mg/kg - NOAEL	Toxicity Study]
	<u>Maternal toxicity</u> : Negative	
	<u>Developmental</u> : Negative	

Conclusion/Summary [Product] : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Result
bis-[4-(2,3-epoxipropoxy)phenyl]propane	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
2,3-epoxypropyl neodecanoate	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
2-Propenoic acid, reaction products with pentaerythritol	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
hexamethylene diacrylate	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

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

Potential acute health effects

Eye contact	: Causes serious eye damage.
Inhalation	: May cause respiratory irritation.
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	: Adverse symptoms may include the following: respiratory tract irritation coughing

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 and also 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]	<u>Toxic effects: liver</u> 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.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
CALDOFIX-2 RESIN	14970.0	5881.4	N/A	N/A	N/A
bis-[4-(2,3-epoxipropoxy)phenyl]propane	11400	20000	N/A	N/A	N/A
2,3-epoxypropyl neodecanoate	N/A	2500	N/A	N/A	N/A
2-Propenoic acid, reaction products with pentaerythritol	540	2500	N/A	N/A	N/A
hexamethylene diacrylate	N/A	3650	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Result

Acute - LC50

Fish

1.3 mg/l [96 hours]

Acute - EC50

Daphnia - *water Flea*

2.1 mg/l [48 hours]

Acute - EC50

Algae

>11 mg/l [72 hours]

Chronic - NOEC

Daphnia - *water Flea*

0.3 mg/l [21 days]

2,3-epoxypropyl neodecanoate

Acute - EC50 - Fresh water

Daphnia - *Daphnia magna*

4.8 mg/l [48 hours]

Acute - LC50

Fish - *Rainbow trout*

9.6 mg/l [96 hours]

Acute - EC50

Algae

3.5 mg/l [96 hours]

2-Propenoic acid, reaction products with pentaerythritol

Acute - LC50 - Fresh water

Fish - *Cyprinus carpio*

3.2 mg/l [96 hours]

Acute - EC50

Algae - *Pseudokirchneriella subcapitata*

12 mg/l [96 hours]

Acute - EC50

Micro-organism

>100 mg/l [3 hours]

Acute - NOEC

Algae - *Pseudokirchneriella subcapitata*

0.31 mg/l [96 hours]

OECD 203 [Fish, Acute Toxicity Test]

OECD 202 [Daphnia sp. Acute Immobilization Test and Reproduction Test]

OECD 211 [Daphnia Magna Reproduction Test]

OECD [Daphnia sp. Acute Immobilization Test and Reproduction Test]

OECD 203 [Fish, Acute Toxicity Test]

OECD 201 [Alga, Growth Inhibition Test]

OECD 203 [Fish, Acute Toxicity Test]

OECD 201 [Alga, Growth Inhibition Test]

OECD 209 [Activated Sludge, Respiration Inhibition Test]

OECD 201 [Alga, Growth Inhibition Test]

Section 12. Ecological information

hexamethylene diacrylate

Acute - EC50 - Fresh waterDaphnia - *Daphnia magna*
2.7 mg/l [48 hours]**Acute - NOEC - Fresh water**Daphnia - *Daphnia magna*
1.8 mg/l [48 hours]**Acute - EC50**Micro-organism
270 mg/l [30 minutes]**Acute - LC50**Fish - *Oryzias latipes*
0.38 mg/l [96 hours]**Acute - NOEC**Algae
0.9 mg/l [72 hours]**Chronic - NOEC**Fish - *Oryzias latipes*
0.072 mg/l [39 days]**Acute - EC50**Algae - *Pseudokirchneriella subcapitata*
2.33 mg/l [72 hours]

OECD [Daphnia sp. Acute Immobilization Test and Reproduction Test]

OECD [Daphnia sp. Acute Immobilization Test and Reproduction Test]

OECD 209 [Activated Sludge, Respiration Inhibition Test]

OECD 203 [Fish, Acute Toxicity Test]

OECD 210 [Fish, Early-Life Stage Toxicity Test]

OECD 201 [Alga, Growth Inhibition Test]

Conclusion/Summary [Product]

: Not available.

Persistence and degradability**Product/ingredient name**bis-[4-(2,3-epoxipropoxy)phenyl]
propane
2,3-epoxypropyl neodecanoate2-Propenoic acid, reaction products
with pentaerythritol

hexamethylene diacrylate

Result

6 to 12% [28 days] - Not readily

Aerobic

7 to 8% [28 days] - Not readily

Aerobic - 21 mg/l14% [28 days] - Not readily
50% [28 days]

72% [60 days]

Aerobic

60 to 70% [28 days] - Readily

OECD 301F [Ready Biodegradability - Manometric Respirometry Test]

OECD 301D [Ready Biodegradability - Closed Bottle Test]

OECD 301B [Ready Biodegradability - CO₂ Evolution Test]

OECD 301D [Ready Biodegradability - Closed Bottle Test]

OECD 301D [Ready Biodegradability - Closed Bottle Test]

OECD 310 [Ready Biodegradability - CO₂ in Sealed Vessels (Headspace Test)]**Conclusion/Summary [Product]**

: Not available.

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



Section 12. Ecological information

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
bis-[4-(2,3-epoxipropoxy)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

Mobility in soil

Soil/Water partition coefficient : Not available.

Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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 spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	TDG Classification	DOT Classification	IMDG	IATA
UN number	UN3082	UN3082	UN3082	UN3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis-[4-(2,3-epoxipropoxy)phenyl]propane, 2,3-epoxypropyl neodecanoate)	Environmentally hazardous substance, liquid, n.o.s. (2,3-epoxypropyl neodecanoate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis-[4-(2,3-epoxipropoxy)phenyl]propane, 2,3-epoxypropyl neodecanoate)	Environmentally hazardous substance, liquid, n.o.s. (bis-[4-(2,3-epoxipropoxy)phenyl]propane, 2,3-epoxypropyl neodecanoate)
Transport hazard class(es)	9  	9  	9  	9  

Section 14. Transport information

Packing group	III	III	III	III
Environmental hazards	Yes.	Yes.	Yes.	Yes.

Additional information

- TDG Classification** : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark).
Non-bulk packages of this product are not regulated as dangerous goods when transported by road or rail.
Explosive Limit and Limited Quantity Index 5
Special provisions 16, 99
- DOT Classification** : Non-bulk packages of this product are not regulated as hazardous materials unless transported by inland waterway. This product is not regulated as a hazardous material when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of §§ 173.24 and 173.24a.
Limited quantity Yes.
Packaging instruction Exceptions: 155. Non-bulk: 203. Bulk: 241.
Special provisions 8, 146, 173, 335, 441, IB3, T4, TP1, TP29
- 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
- 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
- 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.

Section 15. Regulatory information

Canadian lists

- Canadian NPRI** : None of the components are listed.
- CEPA Toxic substances** : None of the components are listed.
- Canada inventory** : Not determined.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)



Section 15. Regulatory information

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Other information

History

Date of issue/Date of revision	: 20/03/2026
Date of previous issue	: 13/01/2025
Version	: 2
Prepared by	: Sphera Solutions
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor DOT = Department of Transportation GHS = Globally Harmonized System of Classification and Labelling of Chemicals HPR = Hazardous Products Regulations IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods IMO = International Maritime Organization LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) N/A = Not available SGG = Segregation Group UN = United Nations

Procedure used to derive the classification

Classification	Justification
SKIN IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE - Category 1	Calculation method
SKIN SENSITIZATION - Category 1A	Calculation method
GERM CELL MUTAGENICITY - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method

References : HPR = Hazardous Products Regulations

▣ Indicates information that has changed from previously issued version.

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