

SAFETY DATA SHEET

SPECIFIX RESIN

Section 1. Identification

GHS product identifier : SPECIFIX RESIN
Cat. No. : 40200051, 50209042
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 Inc.
24766 Detroit Rd. Westlake
Cleveland, OH 44145
United States
Telephone: +1 (440) 871 0071

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

Emergency telephone number (with hours of operation) : National Capital Poison Center: 1-800-222-1222
Infotrac: 1-800-535-5053
Struers US:
1-440-871-0071

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : H315 SKIN IRRITATION - Category 2
H319 EYE IRRITATION - Category 2A
H317 SKIN SENSITIZATION - Category 1
H360 TOXIC TO REPRODUCTION - Category 1B
H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)
(Respiratory tract irritation) - Category 3

GHS label elements

Hazard pictograms :



Signal word : Danger



Section 2. Hazards identification

Hazard statements	: H315 - Causes skin irritation. H317 - May cause an allergic skin reaction. H319 - Causes serious eye irritation. H335 - May cause respiratory irritation. H360 - May damage fertility or the unborn child.
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 and eye or face protection. P271 - Use only outdoors or in a well-ventilated area. P261 - Avoid breathing vapor. P264 - Wash thoroughly after handling. P272 - Contaminated work clothing must 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 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention.
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.
Hazards not otherwise classified	: None known.
Hazards identified when used	: No known significant effects or critical hazards.

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of identification	: Not available.

Ingredient name	Synonyms	%	Identifiers
bis-[4-(2,3-epoxipropoxy)phenyl]propane	-	≥60 - ≤80	CAS: 1675-54-3
Bisphenol F diglycidyl ether, reaction mass of isomers	-	≥15 - ≤40	-
1,6-Hexanediol, reaction products with epichlorohydrin	-	≥10 - ≤30	CAS: 933999-84-9
3-trimethoxysilylpropane-1-thiol	-	≥0.5 - ≤1.5	CAS: 4420-74-0

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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.



Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : 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. Get medical attention.
- Inhalation** : 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. Get medical attention. If necessary, call a poison center or physician. 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** : 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. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : 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. Get medical attention. 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 irritation.
- 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 or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations



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.
- 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
sulfur oxides
metal oxide/oxides

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. Avoid breathing 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).



Section 6. Accidental release measures

Methods and materials for containment and cleaning up

- 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. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. 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
bis-[4-(2,3-epoxipropoxy)phenyl]propane	None.
Bisphenol F diglycidyl ether, reaction mass of isomers	None.
1,6-Hexanediol, reaction products with epichlorohydrin	None.
3-trimethoxysilylpropane-1-thiol	None.

Biological exposure indices

No exposure indices known.



Section 8. Exposure controls/personal protection

- 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.
- 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.
- 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** : Colorless to light yellow.
- Odor** : Odor [Slight]
- Odor threshold** : Not available.
- pH** : Not applicable.
- Melting point/freezing point** : Not available.



Section 9. Physical and chemical properties

Boiling point or initial boiling point and boiling range	: Not available.				
Flash point	: Closed cup: 149°C (300.2°F)				
Evaporation rate	: Not available.				
Flammability	: Not available.				
Lower and upper explosion limit/flammability limit	: Not available.				
Vapor pressure	: <0.00001 kPa (<0.000075006 mm Hg)				
Relative vapor density	: Not available.				
Relative density	: 1.15				
Density	: Not available.				
Solubility(ies)	<table border="1"> <thead> <tr> <th>Media</th><th>Result</th></tr> </thead> <tbody> <tr> <td>water</td><td>Not soluble</td></tr> </tbody> </table>	Media	Result	water	Not soluble
Media	Result				
water	Not soluble				
Miscible with water	: No.				
Partition coefficient: n-octanol/water	: Not applicable.				
Auto-ignition temperature	: Not available.				
Decomposition temperature	: Not available.				
SADT	: Not available.				
Viscosity	: Dynamic (room temperature): Not available. Kinematic (room temperature): 896.4 mm ² /s (896.4 cSt) Kinematic (40°C (104°F)): Not available.				
Flow time (ISO 2431)	: Not available.				
<u>Particle characteristics</u>					
Median particle size	: Not applicable.				
<u>Additional information</u>					
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 under normal conditions. Curing time: SPECIFIX-20: 8 hours SPECIFIX-40: 3.5 hours (40-60 °C)
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.
Incompatible materials	: No specific data.



Section 10. Stability and reactivity

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
Bisphenol F diglycidyl ether, reaction mass of isomers	Rat - Oral - LD50 11400 mg/kg Rat - Male, Female - Oral - LD50 >2000 mg/kg Rabbit - Male, Female - Dermal - LD50 >2000 mg/kg	OECD 401 [Acute Oral Toxicity] OECD 402 [Acute Dermal Toxicity]
1,6-Hexanediol, reaction products with epichlorohydrin	Rat - Oral - LD50 2900 mg/kg Rat - Dermal - LD50 >2000 mg/kg	OECD 401 [Acute Oral Toxicity] OECD 402 [Acute Dermal Toxicity]
3-trimethoxysilylpropane-1-thiol	Rat - Oral - LD50 730 mg/kg Rabbit - Dermal - LD50 2140 mg/kg Rat - Oral - LD50 1701 mg/kg Rat - Male, Female - Oral - LD50 850 mg/kg Rat - Dermal - LD50 2247 mg/kg Rat - Dermal - LD50 2583 mg/kg	

Conclusion/Summary [Product] : Not available.

Skin corrosion/irritation

Product/ingredient name	Result	
bis-[4-(2,3-epoxipropoxy)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 Rabbit - Skin - Edema Irritation score: 1 to 1.5	OECD 404 [Acute Dermal Irritation/Corrosion] OECD 404 [Acute Dermal Irritation/Corrosion]
Bisphenol F diglycidyl ether, reaction	Rabbit - Skin - Erythema/Eschar	Observation period: 72 hours



Section 11. Toxicological information

mass of isomers	Duration of treatment/exposure: 4 hours Irritation score: 0.7 Rabbit - Skin - Edema Duration of treatment/exposure: 4 hours Irritation score: 0 Rabbit - Skin - Mild irritant Duration of treatment/exposure: 24 hours	OECD 404 [Acute Dermal Irritation/Corrosion] Observation period: 4 to 504 hours OECD 404 [Acute Dermal Irritation/Corrosion]
1,6-Hexanediol, reaction products with epichlorohydrin	Rabbit - Skin - Primary dermal irritation index (PDII) Irritation score: 6.2	
3-trimethoxysilylpropane-1-thiol	Rabbit - Skin - Mild irritant Amount/concentration applied: 500 milligrams	

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name bis-[4-(2,3-epoxipropoxy)phenyl] propane	Result Rabbit - Eyes - Irritant Rabbit - Eyes - Redness of the conjunctivae Irritation score: 0.7 Rabbit - Eyes - Cornea opacity Irritation score: 0 Rabbit - Eyes - Iris lesion Irritation score: 0 Rabbit - Eyes - Edema of the conjunctivae Irritation score: 0 Rabbit - Eyes - Redness of the conjunctivae Irritation score: 3.3	OECD 405 [Acute Eye Irritation/Corrosion] Observation period: 1 to 168 hours OECD 405 [Acute Eye Irritation/Corrosion] Observation period: 1 to 168 hours OECD 405 [Acute Eye Irritation/Corrosion] Observation period: 1 to 168 hours OECD 405 [Acute Eye Irritation/Corrosion]
Bisphenol F diglycidyl ether, reaction mass of isomers		
1,6-Hexanediol, reaction products with epichlorohydrin		

Conclusion/Summary [Product] : Not available.

Respiratory corrosion/irritation

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Product/ingredient name	Result
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Section 11. Toxicological information

bis-[4-(2,3-epoxipropoxy)phenyl] propane	Guinea pig - skin <u>Result:</u> Sensitizing Mouse - skin <u>Result:</u> Sensitizing	OECD 406 [Skin Sensitization]
Bisphenol F diglycidyl ether, reaction mass of isomers	Guinea pig - skin <u>Result:</u> Sensitizing	OECD 429 [Skin Sensitization: Local Lymph Node Assay]
1,6-Hexanediol, reaction products with epichlorohydrin	Mouse - skin <u>Result:</u> Sensitizing	OECD 429 [Skin Sensitization: Local Lymph Node Assay]
3-trimethoxysilylpropane-1-thiol	Guinea pig - skin <u>Result:</u> Sensitizing	OECD 406 [Skin Sensitization]

Skin

Conclusion/Summary [Product] : Not available.

Respiratory

Conclusion/Summary [Product] : Not available.

Germ cell mutagenicity

Product/ingredient name	Result	
bis-[4-(2,3-epoxipropoxy)phenyl] propane	Mammalian-Animal >3000 mg/kg [5 days] <u>Result:</u> Negative	
Bisphenol F diglycidyl ether, reaction mass of isomers	In vitro - Bacteria <u>Result:</u> Positive In vivo - Mammalian-Animal <u>Result:</u> Negative	
1,6-Hexanediol, reaction products with epichlorohydrin	In vivo - Mammalian-Animal 2000 mg/kg <u>Result:</u> Negative	OECD 486 [486 Unscheduled DNA Synthesis (UDS) Test with Mammalian Liver Cells <i>in vivo</i>]
Conclusion/Summary [Product]	: Not available.	

Carcinogenicity

Product/ingredient name	Result	
bis-[4-(2,3-epoxipropoxy)phenyl] propane	Rat - Oral - TC 100 mg/kg [24 hours] <u>Result:</u> Negative Mouse - Male - Dermal - TC 100 mg/kg [24 hours] <u>Result:</u> Negative Rat - Female - Dermal - TC 1000 mg/kg [24 hours] <u>Result:</u> 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	OSHA	IARC	NTP
bis-[4-(2,3-epoxipropoxy) phenyl]propane	-	3	-



Section 11. Toxicological information

Reproductive toxicity

Product/ingredient name	Result	
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Rabbit - Oral <u>Developmental</u> : Negative	
Bisphenol F diglycidyl ether, reaction mass of isomers	Rabbit - Dermal 300 mg/kg - NOAEL <u>Maternal toxicity</u> : Negative <u>Developmental</u> : Negative	
1,6-Hexanediol, reaction products with epichlorohydrin	Rat - Oral 55 mg/kg [7 days per week] <u>Fertility effects</u> : Positive Rat - Female - Oral <u>Developmental</u> : Negative	OECD 443 [Extended One-Generation Reproductive Toxicity Study] OECD 414 [Prenatal Developmental Toxicity Study]

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
1,6-Hexanediol, reaction products with epichlorohydrin	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

Not available.

Potential acute health effects

Eye contact	: Causes serious eye irritation.
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 or irritation watering redness
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Section 11. Toxicological information

Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing reduced fetal weight increase in fetal deaths skeletal malformations
Skin contact	: Adverse symptoms may include the following: irritation redness reduced fetal weight increase in fetal deaths skeletal malformations
Ingestion	: Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations

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	
1,6-Hexanediol, reaction products with epichlorohydrin	Chronic - Rat - Oral - NOAEL 300 mg/kg [90 days]	OECD 408 [Repeated Dose 90-Day Oral Toxicity Study in Rodents]

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	: No known significant effects or critical hazards.
Reproductive toxicity	: May damage fertility or the unborn child.

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)
SPECIFIX RESIN	5286.3	5171.0	N/A	N/A	N/A
bis-[4-(2,3-epoxipropoxy)phenyl]propane	11400	20000	N/A	N/A	N/A
Bisphenol F diglycidyl ether, reaction mass of isomers	2500	2500	N/A	N/A	N/A
1,6-Hexanediol, reaction products with epichlorohydrin	2900	2500	N/A	N/A	N/A
3-trimethoxysilylpropane-1-thiol	730	1100	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Acute - LC50 Fish 1.3 mg/l [96 hours]	OECD 203 [Fish, Acute Toxicity Test]
	Acute - EC50 Daphnia - <i>water Flea</i> 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 - <i>water Flea</i> 0.3 mg/l [21 days]	OECD 211 [Daphnia Magna Reproduction Test]
Bisphenol F diglycidyl ether, reaction mass of isomers	Acute - LC50 Fish 2.54 mg/l [96 hours]	
	Acute - EC50 Algae >1000 mg/l [72 hours]	OECD 201 [Alga, Growth Inhibition Test]
	Acute - EC50 Daphnia 2.55 mg/l [48 hours]	OECD 202 [Daphnia sp. Acute Immobilization Test and Reproduction Test]
1,6-Hexanediol, reaction products with epichlorohydrin	Acute - LC50 - Fresh water Fish - <i>Oncorhynchus mykiss</i> 30 mg/l [96 hours]	OECD 203 [Fish, Acute Toxicity Test]
	Acute - EC50 - Fresh water Daphnia - <i>Daphnia magna</i> 47 mg/l [48 hours]	OECD 202 [Daphnia sp. Acute Immobilization Test and Reproduction Test]
	Acute - IC50 Micro-organism - <i>Soil organisms</i> >100 mg/l [28 days]	
	Chronic - NOEC Daphnia 10 mg/l [21 days]	OECD 211 [Daphnia Magna Reproduction Test]
	Chronic - EC10 Fish 1.24 mg/l [35 days]	OECD 210 [Fish, Early-Life Stage Toxicity Test]
3-trimethoxysilylpropane-1-thiol	Acute - LC50 - Fresh water Fish - <i>Danio rerio</i>	EU



Section 12. Ecological information

439 mg/l [96 hours]
Acute - NOEC - Fresh water EU
 Fish - *Danio rerio*
 350 mg/l [96 hours]
Acute - EC50 - Fresh water EU
 Daphnia - *Daphnia magna*
 6.7 mg/l [48 hours]
Acute - EC50 - Fresh water EU
 Algae - *Desmodesmus subspicatus*
 267 mg/l [72 hours]
Acute - NOEC - Fresh water EU
 Algae - *Desmodesmus subspicatus*
 40 mg/l [72 hours]

Conclusion/Summary [Product] : Not available.

Persistence and degradability

Product/ingredient name	Result	
bis-[4-(2,3-epoxipropoxy)phenyl]propane	6 to 12% [28 days] - Not readily	OECD 301F [Ready Biodegradability - Manometric Respirometry Test]
Bisphenol F diglycidyl ether, reaction mass of isomers	10 mg/l 16% [28 days] - Not readily	OECD 301B [Ready Biodegradability - CO ₂ Evolution Test]
1,6-Hexanediol, reaction products with epichlorohydrin	Aerobic - 2 mg/l 47% [28 days] - Inherent	OECD 301D [Ready Biodegradability - Closed Bottle Test]
3-trimethoxysilylpropane-1-thiol	Aerobic - 16.1 mg/l 51% [28 days] - Not readily	EU

Conclusion/Summary [Product] : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
SPECIFIX RESIN	-	-	Readily
bis-[4-(2,3-epoxipropoxy)phenyl]propane	-	-	Not readily
Bisphenol F diglycidyl ether, reaction mass of isomers	-	-	Not readily
1,6-Hexanediol, reaction products with epichlorohydrin	-	-	Inherent
3-trimethoxysilylpropane-1-thiol	-	-	Not readily

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
Bisphenol F diglycidyl ether, reaction mass of isomers	3.3	150	Low
1,6-Hexanediol, reaction products with epichlorohydrin	0.822	3.57	Low

Mobility in soil

Soil/Water partition coefficient : Not available.



Section 12. Ecological information

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

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN3082	UN3082	UN3082	UN3082	UN3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (bis-[4-(2,3-epoxipropoxy)phenyl]propane)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis-[4-(2,3-epoxipropoxy)phenyl]propane, Bisphenol F diglycidyl ether, reaction mass of isomers)	SUBSTANCIA LÍQUIDA PELIGROSA PARA EL MEDIO AMBIENTE, N.E. P. (bis-[4-(2,3-epoxipropoxy)phenyl]propane, Bisphenol F diglycidyl ether, reaction mass of isomers)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis-[4-(2,3-epoxipropoxy)phenyl]propane, Bisphenol F diglycidyl ether, reaction mass of isomers)	Environmentally hazardous substance, liquid, n.o.s. (bis-[4-(2,3-epoxipropoxy)phenyl]propane, Bisphenol F diglycidyl ether, reaction mass of isomers)
Transport hazard class(es)	9  	9  	9  	9  	9  
Packing group	III	III	III	III	III
Environmental hazards	Yes.	Yes.	Yes.	Yes.	Yes.

Additional information

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



Section 14. Transport 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. <u>Explosive Limit and Limited Quantity Index</u> 5 <u>Special provisions</u> 16, 99
Mexico Classification	: 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. <u>Special provisions</u> 274, 331, 335, 375
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. <u>Emergency schedules</u> F-A, S-F <u>Special provisions</u> 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. <u>Quantity limitation</u> 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. <u>Special provisions</u> 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.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined
United States inventory (TSCA 8b): Not determined.

TSCA 12(b) - Chemical export notification

Not applicable.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.



Section 15. Regulatory information

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : SKIN IRRITATION - Category 2
 EYE IRRITATION - Category 2A
 SKIN SENSITIZATION - Category 1
 TOXIC TO REPRODUCTION - Category 1B
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Composition/information on ingredients

Name	%	Classification
bis-[4-(2,3-epoxipropoxy)phenyl] propane	≥60 - ≤80	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Bisphenol F diglycidyl ether, reaction mass of isomers	≥15 - ≤40	SKIN IRRITATION - Category 2 SKIN SENSITIZATION - Category 1A
1,6-Hexanediol, reaction products with epichlorohydrin	≥10 - ≤30	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1 TOXIC TO REPRODUCTION - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
3-trimethoxysilylpropane-1-thiol	≥0.5 - ≤1.5	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 SKIN SENSITIZATION - Category 1B

SARA 313

Not applicable.

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

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)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.



Section 16. Other information

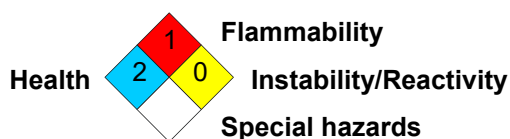
Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		1
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



Procedure used to derive the classification

Classification	Justification
SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1 TOXIC TO REPRODUCTION - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method Calculation method Calculation method Calculation method Calculation method

History

Date of issue/Date of revision	: 03/20/2026
Date of previous issue	: No previous validation
Version	: 1
Prepared by	: Sphera Solutions
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals 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 TDG = Transportation of Dangerous Goods UN = United Nations
References	: HCS (U.S.A.)- Hazard Communication Standard International transport regulations

Indicates information that has changed from previously issued version.



Section 16. Other information

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.

