SAFETY DATA SHEET

METAFLUX 70-21

Revision date: 2025-02-05

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

1.1 Product identifier

Product name : METAFLUX 70-21 Knead-Paste (resin+hardener)

Registration number : Not available. :

Product code 70-2110 / 70-2140

Product description : mastic

Other means of identification

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

Product use : 2-Component adhesive system

1.3 Details of the supplier of the safety data sheet

Supplier : TECHNO-SERVICE GmbH
Detmolder Str. 515
D-33605 Bielefeld
Tel.: +49(0) 521 924440
Fax: +49 (0) 521 207432

e-mail address of person responsible for this SDS : verkauf@metaflux.de

1.4 Emergency telephone number

Supplier

Telephone number Canutec: 1-613-996-6666

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Working pack (preparation)

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

Skin Irrit. 2, H315
Eye Irrit. 2, H319
Skin Sens. 1, H317
Aquatic Chronic 3, H412

Ingredients of unknown toxicity :

Ingredients of unknown ecotoxicity :

SECTION 2: Hazards identification

Classification according to Directive 1999/45/EC [DPD]

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : Xi; R38
R43
R52/53

Human health hazards : Irritating to skin. May cause sensitisation by skin contact.

Environmental hazards : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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

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

2.2 Label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.
Harmful to aquatic life with long lasting effects.

Precautionary statements

General : Not applicable.

Prevention : Wear protective gloves. Wear eye or face protection. Avoid release to the environment.

Response : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage : Not applicable.

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

Hazardous ingredients : reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)

Supplemental label elements : Not applicable.

Supplemental label elements : Contains epoxy constituents. See information supplied by the manufacturer.

Special packaging requirements

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

Tactile warning of danger : Not applicable.

2.3 Other hazards

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

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Working pack (preparation)

Product/ingredient name	Identifiers	%	Classification 67/548/EEC	Classification Regulation (EC) No. 1272/2008 [CLP]	Type
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	CAS: 25068-38-6 EC: 500-033-5 RRN: 01-2119456619-26	7-13	Xi; R36/38 R43 N; R51/53	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411	[1]
Benzyl alcohol	CAS: 100-51-6 EC: 202-859-9	3-7	Xn; R20/22	Acute Tox. 4, H302 Acute Tox. 4, H332 Eye Irrit. 2, H319	[1]
formaldehyde, oligomeric reaction products with 1-chloro-2, 3-epoxypropane and phenol	CAS: 9003-36-5 EC: 500-006-8 RRN: 01-2119454392-40	1-3	Xi; R38 R43 N; R51/53	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411	[1]
2,4,6-tris (dimethylaminomethyl) phenol	CAS: 90-72-2 EC: 202-013-9	1-3	Xn; R22 C; R34 R52/53 **See Section 16 for the full text of the R-phrases declared above.**	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317 Aquatic Chronic 3, H412 **See Section 16 for the full text of the H statements declared above.**	[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 and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
[5] Substance of equivalent concern

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

SECTION 4: First aid measures

4.1 Description of 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 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 adverse health effects persist or are severe. 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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person

SECTION 4: First aid measures

may need to be kept under medical surveillance for 48 hours.

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. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 if adverse health effects persist or are severe. 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. 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

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

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

Ingestion : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

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

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : Symptomatic treatment and supportive therapy as indicated. Following severe exposure the patient should be kept under medical review for at least 48 hours.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

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 harmful 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
nitrogen oxides
halogenated compounds
metal oxide/oxides

5.3 Advice for firefighters

Special precautions 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. Avoid breathing 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.

6.3 Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

SECTION 6: Accidental release measures

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. 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

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

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

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. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Avoid release to the environment. 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 between the following temperatures: 2 to 40°C (35.6 to 104°F). 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. 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.

Storage hazard class Huntsman Advanced Materials : Storage class 12, Liquids, not dangerous

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Workplace exposure limits (for total dust and inhalable quartz dust) must be complied with. If this is not possible, then suitable dust masks must be worn.

W A R N I N G ! This product contains quartz, which has been classified by IARC as carcinogenic for humans (Group 1), and which can cause silicosis and lung cancer following exposure to respirable dust. It is therefore important to take particular care to avoid inhalation exposure when mechanically processing cured material (e.g. grinding, sanding, sawing).
QUARTZ (CAS RN 14808-60-7):
United Kingdom: TWA: 0.1 mg/m³ 8 hour(s). Form: respirable dust
Ireland: OELV-8hr: 0.1 mg/m³ 8 hour(s). Form: respirable dust
Switzerland: TWA: 0.15 mg/m³ 8 hour(s). Form: respirable dust
Australia: TWA: 0.1 mg/m³ 8 hour(s)

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. 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.

Derived effect levels

Product/ingredient name	Type	Exposure	Value	Population	Effects
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	DNEL	Short term Dermal	8.33 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	12.25 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	8.33 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	12.25 mg/m³	Workers	Systemic
	DNEL	Short term Dermal	3.571 mg/kg bw/day	Consumers	Systemic
	DNEL	Short term Oral	0.75 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Dermal	3.571 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Oral	0.75 mg/kg bw/day	Consumers	Systemic
Benzyl alcohol	DNEL	Short term Dermal	47 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	450 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	9.5 mg/kg	Workers	Systemic

SECTION 8: Exposure controls/personal protection

			bw/day		
	DNEL	Long term Inhalation	90 mg/m³	Workers	Systemic
	DNEL	Short term Dermal	28.5 mg/kg bw/day	Consumers	Systemic
	DNEL	Short term Inhalation	40.55 mg/m³	Consumers	Systemic
	DNEL	Short term Oral	25 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Dermal	5.7 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Inhalation	8.11 mg/m³	Consumers	Systemic
	DNEL	Long term Oral	5 mg/kg bw/day	Consumers	Systemic
2,4,6-tris(dimethylaminomethyl) phenol	DNEL	Long term Inhalation	0.31 mg/m³	Workers	Systemic

Predicted effect concentrations

Product/ingredient name	Type	Compartment Detail	Value	Method Detail
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	PNEC	Fresh water	0.006 mg/l	Assessment Factors
	PNEC	Marine	0.0006 mg/l	Assessment Factors
	PNEC	PNECintermittent	0.018 mg/l	Assessment Factors
	PNEC	Fresh water sediment	0.996 mg/kg	Equilibrium Partitioning
	PNEC	Marine water sediment	0.0996 mg/kg	Equilibrium Partitioning
	PNEC	Soil	0.196 mg/kg	Equilibrium Partitioning
	PNEC	Sewage Treatment Plant	10 mg/l	Assessment Factors
	PNEC	Secondary Poisoning	11 mg/kg	-
Benzyl alcohol	PNEC	Fresh water	1 mg/l	Assessment Factors
	PNEC	Marine	0.1 mg/l	Assessment Factors
	PNEC	PNECintermittent	2.3 mg/l	Assessment Factors
	PNEC	Sewage Treatment Plant	39 mg/l	Assessment Factors
	PNEC	Fresh water sediment	5.27 mg/kg	Assessment Factors
	PNEC	Marine water sediment	0.527 mg/kg	Assessment Factors
	PNEC	Soil	0.456 mg/kg	Assessment Factors
	PNEC	Secondary Poisoning	-	Assessment Factors
2,4,6-tris(dimethylaminomethyl) phenol	PNEC	Fresh water	0.084 mg/l	Assessment Factors
	PNEC	Marine	0.0084 mg/l	Assessment Factors
	PNEC	PNECintermittent	0.84 mg/l	Assessment Factors
	PNEC	Sewage Treatment Plant	0.2 mg/l	Assessment Factors

8.2 Exposure controls

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

SECTION 8: Exposure controls/personal protection

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.

Use gloves approved to relevant standards e.g. EN 374 (Europe), F739 (US). Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek advice from glove suppliers. Additional information can be found for instance at www.gisbau.de.

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 : In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid. [Paste.]

Colour : Not available.

Odour : Not available.

Odour threshold : Not available.

pH : Not available.

Melting point/freezing point : Not available.

Initial boiling point and boiling range : Not available.

Flash point : Closed cup: >100°C [DIN 51758 EN 22719 (Pensky-Martens Closed Cup)]

Evaporation rate : Not available.

SECTION 9: Physical and chemical properties

Flammability (solid, gas) : Not available.

Burning time : Not applicable.

Burning rate : Not applicable.

Upper/lower flammability or explosive limits : Not available.

Vapour pressure : Not available.

Vapour density : Not available.

Relative density : Not available.

Solubility(ies)

Water solubility : Not available.

Partition coefficient: n-octanol/water ($LogK_{ow}$) : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Dynamic: Not available.
Kinematic: Not available.
Kinematic (40°C): Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

9.2 Other information

Density : 1 g/cm³ [25°C (77°F)]

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.

10.4 Conditions to avoid : No specific data.

10.5 Incompatible materials : No specific data.

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

Decomposition products may include the following materials:Refer to SDS for individual components of the pack.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Endpoint	Species	Result	Exposure
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	LC0 Inhalation Vapour	Rat - Male	0.00001 ppm	5 hours
	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat - Female	>2000 mg/kg	-
Benzyl alcohol	LC50 Inhalation Dusts and mists	Rat - Male, Female	>4178 mg/m³	4 hours
	LD50 Oral	Rat - Male	1620 mg/kg	-
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat - Male, Female	>5000 mg/kg	-
2,4,6-tris (dimethylaminomethyl) phenol	LD50 Dermal	Rat - Male	>971 mg/kg	-
	LD50 Oral	Rat - Male, Female	2169 mg/kg	-

Conclusion/Summary : No additional information.

Acute toxicity estimates

Not available.

Irritation/Corrosion

Product/ingredient name	Test	Species	Route of exposure	Result
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD 404 Acute Dermal Irritation/ Corrosion	Rabbit	Skin	Mild irritant
	OECD 405 Acute Eye Irritation/ Corrosion	Rabbit	Eyes	Mild irritant
Benzyl alcohol	OECD 404 Acute Dermal Irritation/ Corrosion	Rabbit	Skin	Non-irritant.
	OECD 405 Acute Eye Irritation/ Corrosion	Rabbit	Eyes	Irritant
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	OECD 405 Acute Eye Irritation/ Corrosion	Rabbit	Eyes	Non-irritant.
	OECD 404 Acute Dermal Irritation/ Corrosion	Rabbit	Skin	Mild irritant
2,4,6-tris (dimethylaminomethyl) phenol	OECD 404 Acute Dermal Irritation/ Corrosion	Rabbit	Skin	Corrosive
	EPA CFR	Rabbit	Eyes	Corrosive

Conclusion/Summary

Skin :

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		reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	Irritating to skin.
		Benzyl alcohol	Non-irritating to the skin.
		2,4,6-tris (dimethylaminomethyl) phenol	Corrosive to the skin.
Eyes	:	reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	Irritating to eyes.
		Benzyl alcohol	Irritating to eyes.
		formaldehyde, oligomeric reaction products with 1-chloro-2, 3-epoxypropane and phenol	Non-irritating to the eyes.
		2,4,6-tris (dimethylaminomethyl) phenol	Corrosive to eyes.
Respiratory	:	No additional information.	

Sensitiser

Product/ingredient name	Test	Route of exposure	Species	Result
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD 429 Skin Sensitisation: Local Lymph Node Assay	skin	Mouse	Sensitising
Benzyl alcohol	-	skin	Guinea pig	Not sensitizing
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	OECD 429 Skin Sensitisation: Local Lymph Node Assay	skin	Mouse	Sensitising
2,4,6-tris (dimethylaminomethyl) phenol	OECD 406 Skin Sensitization	skin	Guinea pig	Not sensitizing

Conclusion/Summary

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

Product/ingredient name	Test	Result
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD 471 Bacterial Reverse Mutation Test	Positive
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Positive
	OECD 478 Genetic Toxicology: Rodent Dominant Lethal Test	Negative
	EPA OPPTS	Negative
Benzyl alcohol	OECD 474 Mammalian Erythrocyte Micronucleus Test	Negative

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formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	OECD 471 Bacterial Reverse Mutation Test	Positive
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Positive
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	Positive
	OECD 474 Mammalian Erythrocyte Micronucleus Test	Negative
	OECD 486 Unscheduled DNA Synthesis (UDS) Test with Mammalian Liver Cells in vivo	Negative
2,4,6-tris (dimethylaminomethyl) phenol	OECD 471 Bacterial Reverse Mutation Test	Negative
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Negative
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	Negative

Conclusion/Summary : 2,4,6-tris (dimethylaminomethyl) phenol — Not mutagenic in a standard battery of genetic toxicological tests.

Carcinogenicity

Product/ingredient name	Test	Species	Exposure	Result	Route of exposure	Target organs
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies	Rat	2 years; 7 days per week	Negative	Oral	-
	OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies	Rat	2 years; 5 days per week	Negative	Dermal	-
	OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies	Mouse	2 years; 3 days per week	Negative	Dermal	-
Benzyl alcohol	OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies	Rat	103 weeks; 5 days per week	Negative	Oral	-

Conclusion/Summary : No additional information.

Reproductive toxicity

Product/ingredient name	Test	Species	Result/Result type	Target organs
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD 416 Two-Generation Reproduction Toxicity Study	Rat	Oral: 540 mg/kg NOEL	-
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	OECD 416 Two-Generation Reproduction Toxicity Study	Rat	Oral: 540 mg/kg NOEL	-
2,4,6-tris	OECD 422 Combined Repeated	Rat	Oral: NOEL	-

SECTION 11: Toxicological information

(dimethylaminomethyl) phenol	Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test			

Conclusion/Summary : No additional information.

Teratogenicity

Product/ingredient name	Test	Species	Result/Result type
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD 414 Prenatal Developmental Toxicity Study	Rat - Female	>540 mg/kg NOEL
	EPA CFR	Rabbit - Female	>300 mg/kg NOEL
	OECD 414 Prenatal Developmental Toxicity Study	Rabbit - Female	180 mg/kg NOAEL
Benzyl alcohol	-	Mouse - Female	550 mg/kg NOAEL
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	EPA CFR	Rabbit - Female	>300 mg/kg NOEL

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Not available.

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

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : Irritating to mouth, throat and stomach.

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

Eye contact : Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : No specific data.

Ingestion : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

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

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

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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	Test	Result type		Result	Target organs
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	NOAEL	-	50 mg/kg	-
	OECD 411 Subchronic Dermal Toxicity: 90-day Study	NOEL		10 mg/kg	-
	OECD 411 Subchronic Dermal Toxicity: 90-day Study	NOAEL		100 mg/kg	-
Benzyl alcohol	-	NOAEL	-	400 mg/kg	central nervous system (CNS)
	OECD 412 Repeated Dose Inhalation Toxicity: 28-day or 14-day Study	NOEC	Dusts and mists	1072 mg/m³	-
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	OECD 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	NOAEL	-	250 mg/kg	-
2,4,6-tris (dimethylaminomethyl) phenol	OECD 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	NOEL	-	15 mg/kg	brain, liver, spleen

Conclusion/Summary : No additional information.

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

Carcinogenicity : No known significant effects or critical hazards.

IARC : quartz (SiO2) 1

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Test	Endpoint		Exposure	Species	Result	
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	EPA CFR	Acute	EC50	72 hours Static	Algae	9.4	mg/l
	OECD 202 *Daphnia* sp. Acute Immobilisation Test	Acute	EC50	48 hours Static	Daphnia	1.7	mg/l
	Unknown guidelines	Acute	IC50	3 hours Static	Bacteria	>100	mg/l

SECTION 12: Ecological information

	OECD 203 Fish, Acute Toxicity Test	Acute	LC50	96 hours Static	Fish	1.5	mg/l
	OECD 211 Daphnia Magna Reproduction Test	Chronic	NOEC	21 days Semi-static	Daphnia	0.3	mg/l
Benzyl alcohol	OECD 202 *Daphnia* sp. Acute Immobilisation Test	Acute	EC50	48 hours	Daphnia	230	mg/l
	OECD 201 Alga, Growth Inhibition Test	Acute	EgC50	72 hours Static	Algae	770	mg/l
	EPA OPPTS	Acute	LC50	96 hours Static	Fish	460	mg/l
	OECD 201 Alga, Growth Inhibition Test	Chronic	NOEC	72 hours Static	Algae	310	mg/l
	OECD 211 Daphnia Magna Reproduction Test	Chronic	NOEC	21 days Semi-static	Daphnia	51	mg/l
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	OECD 201 Alga, Growth Inhibition Test	Acute	EC50	72 hours Static	Algae	1.8	mg/l
	OECD 202 Part I (Daphnia sp. , Acute Immobilisation test)	Acute	EC50	48 hours Static	Daphnia	1.6	mg/l
	-	Acute	IC50	3 hours Static	Bacteria	>100	mg/l
	OECD 203 Fish, Acute Toxicity Test	Acute	LC50	96 hours Semi-static	Fish	0.55	mg/l
	OECD 211 Daphnia Magna Reproduction Test	Chronic	NOEC	21 days Semi-static	Daphnia	0.3	mg/l
2,4,6-tris (dimethylaminomethyl) phenol	OECD 201 Alga, Growth Inhibition Test	Acute	ErC50 (growth rate)	72 hours Static	Algae	84	mg/l
	Unknown guidelines	Acute	LC50	96 hours Static	Daphnia	718	mg/l
	-	Acute	LC50	96 hours Static	Fish	175	mg/l
	-	Chronic	NOEC	72 hours	Algae	6.25	mg/l

Conclusion/Summary : Benzyl alcohol Not toxic or harmful to aquatic organisms.

12.2 Persistence and degradability

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Product/ingredient name	Test	Period	Result
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD Derived from OECD 301F (Biodegradation Test)	28 days	5 %
Benzyl alcohol	OECD 301A Ready Biodegradability - DOC Die-Away Test	21 days	95 to 97 %
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	EU	28 days	0 %
2,4,6-tris (dimethylaminomethyl) phenol	OECD 301D Ready Biodegradability - Closed Bottle Test	28 days	4 %

Conclusion/Summary : reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700) Not readily biodegradable.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	Fresh water 4.83 days Fresh water 3.58 days Fresh water 7.1 days	-	Not readily
Benzyl alcohol	-	-	Readily
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	-	-	Not readily
2,4,6-tris (dimethylaminomethyl) phenol	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	3.242	31	low
Benzyl alcohol	1.1	1	low
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	2.7 to 3.6	-	low
2,4,6-tris (dimethylaminomethyl) phenol	0.219	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Mobility : Not available.

SECTION 12: Ecological information

12.5 Results of PBT and vPvB assessment

Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

12.7 Other ecological information

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

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
07 02 08*	other still bottoms and reaction residues

Packaging

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.

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

	14.1 UN number	14.2 UN proper shipping name
ADR/RID	Not regulated.	-
IMDG	Not regulated.	-
IATA	Not regulated.	-

	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards	14.6 Special precautions for user	Additional information

SECTION 14: Transport information

ADR/RID	-	-	No.	**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.	-
IMDG	-	-	No.	**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.	-
IATA	-	-	No.	**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 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not applicable.

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)

This product is compliant with the REACH Regulation EC 1907/2006.
Huntsman has pre-registered and is registering all of the substances that it manufactures in or imports into the European Economic Area (EEA) that are subject to Title II of the REACH Regulation.

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 : Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.

Black List Chemicals : Not listed

Priority List Chemicals : Not listed

Integrated pollution prevention and control list (IPPC) - Air : Not listed

Integrated pollution prevention and control list (IPPC) - Water : Not listed

National regulations

References : The provision of Safety Data Sheets comes under Regulation 6 of CHIP (CHIP is the recognised abbreviation for the Chemicals Hazard Information and Packaging Regulations). This is an addition to the Health and Safety at Work Act 1974.

Australia inventory (AICS) : All components are listed or exempted.

Canada inventory : Not determined.

China inventory (IECSC) : All components are listed or exempted.

Japan inventory :

Korea inventory (KECI) : All components are listed or exempted.

New Zealand Inventory of Chemicals (NZIoC) : All components are listed or exempted.

Philippines inventory (PICCS) :

United States inventory (TSCA 8b) : All components are listed or exempted.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

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Chemical Weapons Convention List Schedule III Chemicals : Not listed

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

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

Classification	Justification
Skin Irrit. 2, H315	Expert judgment
Eye Irrit. 2, H319	Expert judgment
Skin Sens. 1, H317	Expert judgment
Aquatic Chronic 3, H412	Expert judgment

Full text of abbreviated H statements :
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS] :
Acute Tox. 4, H302 ACUTE TOXICITY: ORAL - Category 4
Acute Tox. 4, H332 ACUTE TOXICITY: INHALATION - Category 4
Aquatic Chronic 2, H411 LONG-TERM AQUATIC HAZARD - Category 2
Aquatic Chronic 3, H412 LONG-TERM AQUATIC HAZARD - Category 3
Eye Dam. 1, H318 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
Skin Corr. 1B, H314 SKIN CORROSION/IRRITATION - Category 1B
Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1, H317 SKIN SENSITIZATION - Category 1
Skin Sens. 1B, H317 SKIN SENSITIZATION - Category 1B

Full text of abbreviated R phrases :
R22- Harmful if swallowed.
R20/22- Harmful by inhalation and if swallowed.
R34- Causes burns.
R38- Irritating to skin.
R36/38- Irritating to eyes and skin.
R43- May cause sensitisation by skin contact.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications [DSD/DPD] :
C - Corrosive
Xn - Harmful
Xi - Irritant
N - Dangerous for the environment

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SECTION 16: Other information

(M)SDS no.	:	
Date of printing	:	
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Notice to reader

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.