

SAFETY DATA SHEET

ARALDITE® METAL G HARDENER

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

1.1 Product identifier

Product name : ARALDITE® METAL G HARDENER
Registration number : Not available.
Product code : 00087385
Product description :
Other means of identification : Not available.

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

Product use : Hardener for adhesive systems

1.3 Details of the supplier of the safety data sheet

Supplier : EVOCHEM S.A.
 Tzaverdella Place
 133 41 PHILI , ATTICA - GREECE
 Phone.: 0030 210 5590460 , 0030 210 5590155 -
 Fax: 0030 210 6254737 , 0030 210 5590244

e-mail address of person responsible for this SDS : info@evochem.gr; vmergoupis@evochem.gr;
 sales@evochem.gr
 www.evochem.gr

1.4 Emergency telephone number : National Poisoning Center 2107793777

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

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

Eye Dam. 1, H318

Skin Sens. 1, H317

Ingredients of unknown toxicity :

Ingredients of unknown ecotoxicity :

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

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

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SECTION 2: Hazards identification

Classification	: Xi; R41 R43
Human health hazards	: Risk of serious damage to eyes. May cause sensitisation by skin contact.
Additional information	: According to Directive 99/45/EC, Article 6, Paragraph 1b, classification derived from direct toxicological testing of the preparation take precedence over classification derived from using the conventional (calculation) method.

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	: Danger
Hazard statements	: Causes serious eye damage. May cause an allergic skin reaction.

Precautionary statements

General	: Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
Prevention	: Wear protective gloves: > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL). Wear eye or face protection. Avoid breathing vapour.
Response	: IF IN EYES: Rinse cautiously with water for several minutes. Immediately call a POISON CENTER or physician.
Storage	: Not applicable.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazardous ingredients	: 2,4,6-tris(dimethylaminomethyl)phenol Amines, polyethylenepoly-, triethylenetetramine fraction
Supplemental label elements	: Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings	: Not applicable.
Tactile warning of danger	: Not applicable.

2.3 Other hazards

Other hazards which do not result in classification	: None known.
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SECTION 3: Composition/information on ingredients

3.2 Mixtures	: Mixture
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SECTION 3: Composition/information on ingredients

Product/ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
Benzyl alcohol	CAS: 100-51-6 EC: 202-859-9	7-13	Xn; R20/22	Acute Tox. 4, H302 Acute Tox. 4, H332 Eye Irrit. 2, H319	[1]
2,4,6-tris (dimethylaminomethyl) phenol	CAS: 90-72-2 EC: 202-013-9 RRN: 01-2119560597-27	3-7	Xn; R22 C; R34 R52/53	Acute Tox. 4, H302 Skin Corr. 1C, H314 Eye Dam. 1, H318	[1]
Amines, polyethylenepoly-, triethylenetetramine fraction	CAS: 90640-67-8 EC: 292-588-2 RRN: 01-2119487919-13	3-7	Xn; R21/22 C; R34 R43 R52/53 See Section 16 for the full text of the R-phrases declared above.	Skin Sens. 1B, H317 Aquatic Chronic 3, H412 Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 3, H412 See Section 16 for the full text of the H statements declared above.	[1]

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

Other means of identification

REACH Product name	CAS no.	Other	CAS no.
Amines, polyethylenepoly-, triethylenetetramine fraction	90640-67-8	Amines, polyethylenepoly-, triethylenetetramine fraction	112-24-3

SECTION 4: First aid measures
4.1 Description of first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. 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.

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SECTION 4: First aid measures

- 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. 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. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : May cause an allergic skin reaction.
- Ingestion** : May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains

4.3 Indication of any immediate medical attention and special treatment needed

- 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.

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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.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
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. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

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

6.2 Environmental precautions

: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material 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.

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.

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SECTION 6: Accidental release measures

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 breathe vapour or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

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

7.2 Conditions for safe storage, including any incompatibilities : Store 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. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

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

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

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SECTION 8: Exposure controls/personal protection

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
Benzyl alcohol	DNEL	Short term Dermal	47 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	450 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	9.5 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	90 mg/m ³	Workers	Systemic
	DNEL	Short term Dermal	28.5 mg/kg bw/day	Consumers	Systemic
	DNEL	Short term Inhalation	40.55 mg/m ³	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/m ³	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/m ³	Workers	Systemic
	DNEL	Short term Inhalation	5380 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	0.57 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	1 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	0.028 mg/m ³	Workers	Local
	DNEL	Short term Dermal	8 mg/kg bw/day	Consumers	Systemic
	DNEL	Short term Inhalation	1600 mg/m ³	Consumers	Systemic
	DNEL	Short term Oral	20 mg/kg bw/day	Consumers	Systemic
	DNEL	Short term Dermal	1 mg/cm ²	Consumers	Local
	DNEL	Short term Dermal	0.25 mg/kg bw/day	Consumers	Local
Amines, polyethylenepoly-, triethylenetetramine fraction	DNEL	Long term Inhalation	0.29 mg/m ³	Consumers	Systemic
	DNEL	Long term Oral	0.41 mg/	Consumers	Systemic

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SECTION 8: Exposure controls/personal protection

	DNEL	Long term Dermal	kg bw/day 0.43 mg/ cm ²	Consumers	Local
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Predicted effect concentrations

Product/ingredient name	Type	Compartment Detail	Value	Method Detail
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
2,4,6-tris(dimethylaminomethyl) phenol	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
Amines, polyethylenepoly-, triethylenetetramine fraction	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
	PNEC	Fresh water	190 µg/l	Assessment Factors
	PNEC	Fresh water sediment	95.9 mg/kg	Equilibrium Partitioning
	PNEC	Marine	38 µg/l	Assessment Factors
	PNEC	PNECintermittent	200 µg/l	Assessment Factors
	PNEC	Marine water sediment	19.2 mg/kg	Equilibrium Partitioning
	PNEC	Soil	19.1 mg/kg	Equilibrium Partitioning
	PNEC	Sewage Treatment Plant	4.25 mg/l	Assessment Factors
	PNEC	Secondary Poisoning	0.18 mg/kg	Assessment Factors

8.2 Exposure controls

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

Individual protection measures

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

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

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Material of gloves for long term application (BTT>480min): : butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL)

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SECTION 8: Exposure controls/personal protection

Material of gloves for short term/splash application (10min <BTT<480min):

(BTT = Break Through Time)

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 : Beige.

Odour : Amine-like.

Odour threshold : Not available.

pH : Not available.

Melting point/freezing point : Not available.

Initial boiling point and boiling range : >200°C

Flash point : Closed cup: >200°C

Evaporation rate : Not available.

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 : practically insoluble

20 deg C

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

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SECTION 9: Physical and chemical properties

Auto-ignition temperature : Not available.
Decomposition temperature : >200°C
Viscosity : Dynamic (25°C): 200000 mPa·s
Kinematic: Not available.
Kinematic (40°C): Not available.
Explosive properties : Not available.
Oxidising properties : Not available.

9.2 Other information

Density : 1.55 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 : strong acids, strong bases, strong oxidising agents

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: Carbon oxides, Burning produces obnoxious and toxic fumes.

SECTION 11: Toxicological information
11.1 Information on toxicological effects
Acute toxicity

Product/ingredient name	Endpoint	Species	Result	Exposure
Benzyl alcohol	LC50 Inhalation Dusts and mists	Rat - Male, Female	>4178 mg/m³	4 hours
2,4,6-tris (dimethylaminomethyl) phenol	LD50 Oral	Rat - Male	1620 mg/kg	-
	LD50 Dermal	Rat - Male	>971 mg/kg	-
Amines, polyethylenepoly-, triethylenetetramine fraction	LD50 Oral	Rat - Male, Female	2169 mg/kg	-
	LD50 Dermal	Rabbit - Male, Female	1465.4 mg/kg	-
	LD50 Oral	Rat - Male, Female	1716.2 mg/kg	-

Conclusion/Summary : No additional information.

Acute toxicity estimates

Not available.

Irritation/Corrosion

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SECTION 11: Toxicological information

Product/ingredient name	Test	Species	Route of exposure	Result
ARALDITE METAL G HARDENER	-	Rabbit	Skin	Non-irritant.
Benzyl alcohol	-	Rabbit	Eyes	Severe irritant
	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin	Non-irritant.
	OECD 405 Acute Eye Irritation/Corrosion	Rabbit	Eyes	Irritant
2,4,6-tris (dimethylaminomethyl) phenol	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin	Corrosive
Amines, polyethylenepoly-, triethylenetetramine fraction	EPA CFR	Rabbit	Eyes	Corrosive
	OECD 405 Acute Eye Irritation/Corrosion	Rabbit	Skin	Corrosive
	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Eyes	Corrosive

Conclusion/Summary
Skin

: ARALDITE® METAL G HARDENER Non-irritating to the skin.
Benzyl alcohol Non-irritating to the skin.
2,4,6-tris (dimethylaminomethyl) phenol Corrosive to the skin.
Amines, polyethylenepoly-, triethylenetetramine fraction Corrosive to the skin.

Eyes

: ARALDITE® METAL G HARDENER Severely irritating to eyes.
Benzyl alcohol Irritating to eyes.
2,4,6-tris (dimethylaminomethyl) phenol Corrosive to eyes.
Amines, polyethylenepoly-, triethylenetetramine fraction Corrosive to eyes.

Respiratory

: No additional information.

Sensitiser

Product/ingredient name	Test	Route of exposure	Species	Result
ARALDITE METAL G HARDENER	-	skin	Guinea pig	Sensitising
Benzyl alcohol	-	skin	Guinea pig	Not sensitizing
2,4,6-tris (dimethylaminomethyl) phenol	OECD 406 Skin Sensitization	skin	Guinea pig	Not sensitizing
Amines, polyethylenepoly-, triethylenetetramine fraction	OECD 406 Skin Sensitization	skin	Guinea pig	Sensitising

Conclusion/Summary
Skin

: No additional information.

Respiratory

: No additional information.

Mutagenicity

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SECTION 11: Toxicological information

Product/ingredient name	Test	Result
Benzyl alcohol	OECD 474 Mammalian Erythrocyte Micronucleus Test	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
Amines, polyethylenepoly-, triethylenetetramine fraction	OECD 471 Bacterial Reverse Mutation Test	Positive
	OECD 482 Genetic Toxicology: DNA Damage and Repair, Unscheduled DNA Synthesis in Mammalian Cells in vitro	Negative
	OECD 474 Mammalian Erythrocyte Micronucleus Test	Negative

Conclusion/Summary : 2,4,6-tris (dimethylaminomethyl) phenol
Amines, polyethylenepoly-, triethylenetetramine fraction
Not mutagenic in a standard battery of genetic toxicological tests.
The weight of the scientific evidence indicates that this material is non-genotoxic.

Carcinogenicity

Product/ingredient name	Test	Species	Exposure	Result	Route of exposure	Target organs
Benzyl alcohol	OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies	Rat	103 weeks; 5 days per week	Negative	Oral	-
Amines, polyethylenepoly-, triethylenetetramine fraction	OECD 451 Carcinogenicity Studies	Mouse	3 days per week	Negative	Dermal	-

Conclusion/Summary : No additional information.

Reproductive toxicity

Product/ingredient name	Test	Species	Result/Result type	Target organs
2,4,6-tris (dimethylaminomethyl) phenol	OECD 422 Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test	Rat	Oral: NOEL	-

Conclusion/Summary : Amines, polyethylenepoly-, triethylenetetramine fraction
In accordance with column 2 of Annex VII - X of Regulation (EC) No 1907/2006, the test for this property of the substance does not need to be conducted.

Teratogenicity

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SECTION 11: Toxicological information

Product/ingredient name	Test	Species	Result/Result type
Benzyl alcohol	-	Mouse - Female	550 mg/kg NOAEL
Amines, polyethylenepoly-, triethylenetetramine fraction	OECD 414 Prenatal Developmental Toxicity Study	Rat	0 to 750 mg/kg NOAEL
	OECD 414 Prenatal Developmental Toxicity Study	Rabbit	0 to 125 mg/kg NOAEL

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 : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion : May cause burns to mouth, throat and stomach.
Skin contact : May cause an allergic skin reaction.
Eye contact : Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : No specific data.
Ingestion : Adverse symptoms may include the following:
stomach pains
Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
Eye contact : Adverse symptoms may include the following:
pain
watering
redness

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

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Product/ingredient name	Test	Result type	Result	Target organs
Benzyl alcohol	-	NOAEL -	400 mg/kg	central nervous system (CNS)
2,4,6-tris (dimethylaminomethyl) phenol	OECD 412 Repeated Dose Inhalation Toxicity: 28-day or 14-day Study OECD 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	NOEC Dusts and mists NOEL -	1072 mg/m³ 15 mg/kg	- brain, liver, spleen
Amines, polyethylenepoly-, triethylenetetramine fraction	OECD 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	NOAEL -	50 mg/kg/d	lungs

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
Benzyl alcohol	OECD 202 <i>Daphnia</i> 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 <i>Daphnia</i> Magna Reproduction Test	Chronic NOEC	21 days Semi-static	Daphnia	51 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
Amines, polyethylenepoly-, triethylenetetramine fraction	No official guidelines	Acute EC50	30 minutes Static	Bacteria	800 mg/l
	EU EC C.2 Acute Toxicity for	Acute EC50	48	Daphnia	31.1 mg/l

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SECTION 12: Ecological information

	Daphnia		hours Static			
	OECD 201 Alga, Growth Inhibition Test	Acute	ErC50 (growth rate)	72 hours Semi-static	Algae	20 mg/l
	EPA OPPTS EPA OTS 797.1400	Acute	LC50	96 hours Static	Fish	330 mg/l
	No official guidelines	Chronic	EC10	30 minutes Static	Bacteria	42.5 mg/l
	OECD OECD 202: Part II (Daphnia sp., Reproduction Test)	Chronic	EC10	21 days Semi-static	Daphnia	1.9 mg/l
	OECD 201 Alga, Growth Inhibition Test	Chronic	NOECr	72 hours Semi-static	Algae	<2.5 mg/l

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

12.2 Persistence and degradability

Product/ingredient name	Test	Period	Result
Benzyl alcohol	OECD 301A Ready Biodegradability - DOC Die-Away Test	21 days	95 to 97 %
2,4,6-tris (dimethylaminomethyl) phenol	OECD 301D Ready Biodegradability - Closed Bottle Test	28 days	4 %
Amines, polyethylenepoly-, triethylenetetramine fraction	OECD 302A Inherent Biodegradability: Modified SCAS Test	84 days	20 %
	OECD 301D Ready Biodegradability - Closed Bottle Test	162 days	0 %

Conclusion/Summary : Amines, polyethylenepoly-, triethylenetetramine fraction Not biodegradable

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Benzyl alcohol	-	-	Readily
2,4,6-tris (dimethylaminomethyl) phenol	-	-	Not readily
Amines, polyethylenepoly-, triethylenetetramine fraction	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Benzyl alcohol	1.1	1	low
2,4,6-tris (dimethylaminomethyl) phenol	0.219	-	low
Amines, polyethylenepoly-, triethylenetetramine fraction	-2.65	-	low

12.4 Mobility in soil

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

Mobility : Not available.

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 04*	other organic solvents, washing liquids and mother liquors

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.	-

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SECTION 14: Transport information

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

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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 : Not applicable.
**on the manufacture,
 placing on the market
 and use of certain
 dangerous substances,
 mixtures and articles**

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

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

Canada inventory : Not determined.

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

Japan inventory : Not determined.

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

**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.

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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
Eye Dam. 1, H318 Skin Sens. 1, H317	Expert judgment Expert judgment

Full text of abbreviated H statements : H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
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, H312 ACUTE TOXICITY (dermal) - Category 4
Acute Tox. 4, H332 ACUTE TOXICITY (inhalation) - Category 4
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 Corr. 1C, H314 SKIN CORROSION/IRRITATION - Category 1C
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.
R21/22- Harmful in contact with skin and if swallowed.
R34- Causes burns.
R41- Risk of serious damage to eyes.
R43- May cause sensitisation by skin contact.
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

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SECTION 16: Other information

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.

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