

SAFETY DATA SHEET

Ezero E2000



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

1.1 Product identifier

Product name : Ezero E2000
Product code : 00067071
Product description : Not available.

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

Product use : Component of a Polyurethane System

1.3 Details of the supplier of the safety data sheet

Supplier :
e-mail address of person responsible for this SDS : info@cpifoam.ie

1.4 Emergency telephone number

Supplier
Telephone number : EUROPE: +32 35 75 1234
 ASIA: +65 6336-6011
 USA: +1/800/424.9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

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

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

Classification : Xn; R22
 Xi; R41, R38
 R43

Human health hazards : Harmful if swallowed. Risk of serious damage to eyes. Irritating to skin. May cause sensitisation by skin contact.

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 symbol or symbols :



Indication of danger : Harmful

Risk phrases : R22- Harmful if swallowed.
 R41- Risk of serious damage to eyes.
 R38- Irritating to skin.
 R43- May cause sensitisation by skin contact.

Safety phrases : S24- Avoid contact with skin.
 S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 S37/39- Wear suitable gloves and eye/face protection.

Hazardous ingredients : Alkoxylated ethylene diamine

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SECTION 2: Hazards identification

Supplemental label elements : Not applicable.

Supplemental label elements : None.

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 : Not available.

SECTION 3: Composition/information on ingredients

Substance/mixture : Mixture

Product/ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
tris(2-chloro-1-methylethyl) phosphate	CAS: 13674-84-5	7-25	Xn; R22	Acute Tox. 4, H302 Acute Tox. 4, H332 Aquatic Chronic 3, H412	[1]
1,2-ethanediamine, polymer with methyloxirane	CAS: 25214-63-5	10-20	Xi; R41	Eye Irrit. 2, H319	[1]
Alkoxylated ethylene diamine	CAS: 26316-40-5	1-5	Xi; R36 R43	Eye Irrit. 2, H319 Skin Sens. 1, H317	[1]
2,2'-oxybisethanol	CAS: 111-46-6 Index: 603-140-00-6	1-3	Xn; R22	Acute Tox. 4, H302	[1] [2]
Tris (3 dimethylaminopropyl)amine	CAS: 33329-35-0	1-3	Xn; R21 C; R34	Acute Tox. 4, H312 Skin Corr. 1B, H314 Eye Dam. 1, H318	[1]
Pentamethyldipropylenetriamine	CAS: 3855-32-1	1-3	Xn; R21/22 C; R34	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1B, H314 Eye Dam. 1, H318	[1]
N,N-Dimethylhexadecylamine	CAS: 112-69-6	1-3	Xn; R22 C; R34 N; R50	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318	[1]
bis(2-dimethylaminoethyl)(methyl)amine	CAS: 3030-47-5 Index: 612-109-00-6	0.1-1	T; R24 Xn; R22 C; R34	Aquatic Acute 1, H400 Acute Tox. 4, H302 Acute Tox. 3, H311 Skin Corr. 1B, H314 Eye Dam. 1, H318	[1]
			See section 16 for the full text of the R-phrases declared above	See Section 16 for the full text of the H statements declared above.	

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.

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SECTION 3: Composition/information on ingredientsType

[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

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

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

- Eye contact** : Get medical attention immediately. 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** : 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 may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of 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. 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 delayedPotential acute health effects

- Eye contact** : Severely irritating to eyes. Risk of serious damage to eyes.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Irritating to skin. May cause sensitisation by skin contact.
- Ingestion** : Harmful if swallowed. 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.

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SECTION 4: First aid measures

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.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
 carbon dioxide
 carbon monoxide
 nitrogen oxides
 phosphorus oxides
 halogenated compounds

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 Section 8 for additional information on hygiene measures.

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).

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SECTION 6: Accidental release measures

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.

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. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

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

7.2 Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. 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.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

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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

Product/ingredient name	Exposure limit values
2,2'-oxybisethanol	EH40/2005 WELs (United Kingdom (UK), 8/2007). TWA: 101 mg/m ³ 8 hour(s). TWA: 23 ppm 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 European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

Derived effect levels

No DELs available.

Predicted effect concentrations

No PECs available.

8.2 Exposure controls

Appropriate engineering controls : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure 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 or dusts.

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.
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.

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SECTION 8: Exposure controls/personal protection

- 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.
- 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
Open cup: >100°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** :

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

9.2 Other information

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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.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Endpoint	Species	Result	Exposure
tris(2-chloro-1-methylethyl) phosphate	LC50 Inhalation Dusts and mists	Rat	>4.6 mg/L	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	2800 to 4200 mg/kg	-
1,2-ethanediamine, polymer with methyloxirane	LD50 Dermal	Rabbit - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat - Male, Female	>2000 mg/kg	-
Alkoxylated ethylene diamine	LD50 Dermal	Rabbit - Male, Female	>5000 mg/kg	-
	LD50 Oral	Rat - Male, Female	>5000 mg/kg	-
Diethylene glycol	LC50 Inhalation Vapour	Rat	>5.08 mg/L	4 hours
	LD50 Dermal	Rabbit	12500 mg/kg	-
	LD50 Oral	Rat - Male	>25300 mg/kg	-
Tris (3 dimethylaminopropyl)amine	LC50 Inhalation Dusts and mists	Rat	6.9 mg/L	4 hours
	LD50 Dermal	Rabbit	1150 mg/kg	-
	LD50 Oral	Rat	2350 mg/kg	-
Pentamethyldipropylenetriamine	LD50 Dermal	Rabbit	1000 to 1500 mg/kg	-
	LD50 Oral	Rat	788 mg/kg	-
N,N-Dimethylhexadecylamine	LD50 Dermal	Rabbit	4.29 ml/kg	-
	LD50 Oral	Rat - Male, Female	1015 mg/kg	-
Bis (2-dimethylaminoethyl)(methyl)amine	LC50 Inhalation Dusts and mists	Rat	3.14 mg/L	4 hours
	LD50 Dermal	Rabbit	280 mg/kg	-
	LD50 Oral	Rat	1630 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Test	Species	Result
N,N-Dimethylhexadecylamine	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	-

Conclusion/Summary : Not available.

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SECTION 11: Toxicological information

Sensitiser

Product/ingredient name	Test	Route of exposure	Species	Result
1,2-ethanediamine, polymer with methyloxirane	OECD 406 Skin Sensitization	skin	Guinea pig	Not sensitizing
Alkoxylated ethylene diamine	OECD OECD 406	skin	Guinea pig	Not sensitizing
Tris (3 dimethylaminopropyl)amine	OECD 406 Skin Sensitization	skin	Guinea pig	Not sensitizing

Conclusion/Summary : Not available.

Mutagenicity

Product/ingredient name	Test	Result
tris(2-chloro-1-methylethyl) phosphate	-	Negative
1,2-ethanediamine, polymer with methyloxirane	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Negative
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	Negative
	OECD 471 Bacterial Reverse Mutation Test	Negative
Alkoxylated ethylene diamine	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Negative
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	Negative
	OECD 471 Bacterial Reverse Mutation Test	Negative
Diethylene glycol	-	Negative
N,N-Dimethylhexadecylamine	OECD 471 Bacterial Reverse Mutation Test	Negative
Bis (2-dimethylaminoethyl)(methyl)amine	-	Negative

Conclusion/Summary : Not available.

Carcinogenicity

Product/ingredient name	Test	Species	Exposure	Result	Route of exposure	Target organs
Diethylene glycol	-	Rat	2 years	Negative	Oral	-
	-	Rat	2 years	Negative	Oral	-

Reproductive toxicity

Product/ingredient name	Test	Species	Result/Result type	Target organs
1,2-ethanediamine, polymer with methyloxirane	OECD 421 Reproduction/Developmental Toxicity Screening Test	Rat	Oral: 1000 mg/kg NOAEL	-
Alkoxylated ethylene diamine	OECD 421 Reproduction/Developmental Toxicity Screening Test	Rat	Oral: 1000 mg/kg NOAEL	-
Diethylene glycol	-	Mouse	Oral: 3060 mg/kg	-

Conclusion/Summary : Diethylene glycol: A study in animals has shown that doses produce adverse reproductive effects in the presence of maternal toxicity. A study in animals has shown that high doses produce embryo/foetotoxic effects in the presence of maternal toxicity.

Teratogenicity

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Product/ingredient name	Test	Species	Result/Result type
Diethylene glycol	-	Rat - Female	1118 mg/kg NOEL :
	-	Rabbit - Female	1000 mg/kg

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** : Harmful if swallowed. Irritating to mouth, throat and stomach.
- Skin contact** : Irritating to skin. May cause sensitisation by skin contact.
- Eye contact** : Severely irritating to eyes. Risk of serious damage to eyes.

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.
- 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
1,2-ethanediamine, polymer with methyloxirane	OECD 407 Repeated Dose 28-day Oral Toxicity Study in Rodents	NOAEL Sub-chronic NOAEL Oral	>1000 mg/kg/d	-
Alkoxyated ethylene diamine	Unknown guidelines	NOAEL Sub-chronic NOAEL Oral	>1000 mg/kg/d	-
Diethylene glycol	-	NOAEL Sub-chronic NOAEL Oral	105 mg/kg	-
	-	NOEL : Sub-acute NOEL : Oral	150 mg/kg	kidneys, kidneys

- Conclusion/Summary** : 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.

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SECTION 11: Toxicological information

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
tris(2-chloro-1-methylethyl) phosphate	-	Acute IC50	6 hours	Bacteria	>90 mg/L
	-	Acute LC50	96 hours	Fish	35 mg/L
1,2-ethanediamine, polymer with methyloxirane	EU EC C.3 Algal Inhibition Test	Acute EC50	72 hours Static	Algae	150.67 mg/L
	ISO ISO 8192	Acute EC50	3 hours	Bacteria	>700 mg/L
	EU EC C.2 Acute Toxicity for Daphnia	Acute EC50	48 hours Static	Daphnia	>100 mg/L
	DIN DIN 38412 Part 15	Acute LC50	96 hours Flow-through	Fish	4600 mg/L
	OECD 211 Daphnia Magna Reproduction Test	Chronic NOEC	21 days Semi-static	Daphnia	>10 mg/L
Alkoxylated ethylene diamine	EU EC C.3 Algal Inhibition Test	Acute EC50	72 hours Static	Algae	150.67 mg/L
	OECD 202 <i>Daphnia</i> sp. Acute Immobilisation Test	Acute EC50	48 hours Static	Daphnia	103 mg/L
	EU	Acute IC50	3 hours Static	Bacteria	>10000 mg/L
	OECD 203 Fish, Acute Toxicity Test	Acute LC50	96 hours Static	Fish	25600 mg/L
	OECD 211 Daphnia Magna Reproduction Test	Chronic NOEC	21 days Semi-static	Daphnia	>10 mg/L
Diethylene glycol	-	Acute EC50	48 hours	Daphnia	>84770 mg/L
	OECD 209 Activated Sludge, Respiration Inhibition Test	Acute IC50	3 hours	Bacteria	>1000 mg/L
Pentamethyldipropylenetriamine	-	Acute EC50	48 hours	Daphnia	>100 mg/L
	-	Acute IC50	72 hours	Algae	>100 mg/L
	-	Acute LC50	96 hours	Fish	>100 mg/L
N,N-Dimethylhexadecylamine Bis (2-dimethylaminoethyl)(methyl)amine	OECD 203 Fish, Acute Toxicity Test	Acute LC50	96 hours Static	Fish	0.1 to 1 mg/L
	-	Acute EC50	48 hours	Daphnia	>100 mg/L
	-	Acute IC50	72 hours	Algae	>100 mg/L
	-	Acute LC50	96 hours	Fish	220 mg/L

12.2 Persistence and degradability

Product/ingredient name	Test	Period	Result
tris(2-chloro-1-methylethyl) phosphate	-	28 days	<60 %
1,2-ethanediamine, polymer with methyloxirane	EU	28 days	9 %
Alkoxylated ethylene diamine	EU	28 days	2 %
2,2'-oxybisethanol	ISO	28 days	>90 %
Pentamethyldipropylenetriamine	-	28 days	<60 %
N,N-	OECD 301D Ready Biodegradability - Closed	28 days	59 to 70 %

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SECTION 12: Ecological information

Dimethylhexadecylamine bis(2-dimethylaminoethyl)(methyl)amine	Bottle Test -	28 days	<60 %
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Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
tris(2-chloro-1-methylethyl) phosphate	-	-	Not readily
1,2-ethanediamine, polymer with methyloxirane	-	-	Not readily
Alkoxylated ethylene diamine	-	-	Not readily
2,2'-oxybisethanol	-	-	Readily
Pentamethyldipropylenetriamine	-	-	Not readily
N,N-Dimethylhexadecylamine	-	-	Readily
bis(2-dimethylaminoethyl)(methyl)amine	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
1,2-ethanediamine, polymer with methyloxirane	-1.56 to 1.82	-	low
Alkoxylated ethylene diamine	-1.25 to 1.2	-	low
2,2'-oxybisethanol	-1.98 to -1.365	180	high
Pentamethyldipropylenetriamine	0.4	-	low

12.4 Mobility in soil

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. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

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SECTION 13: Disposal considerations

Hazardous waste : Yes.

European waste catalogue (EWC)

Waste code	Waste designation
07 01 99 16 03 05*	wastes not otherwise specified organic wastes containing dangerous substances

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. -

ADN/ADNR Not regulated. -

IMDG Not regulated. -

IATA Not regulated. -

	ADR/RID	ADN/ADNR	IMDG	IATA
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.
14.6 Special precautions for user	Not available.	Not available.	Not available.	Not available.
Additional information	-	-	-	-

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)

Annex XIV - List of substances subject to authorisation

Substances of very high concern

None of the components are listed.

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SECTION 15: Regulatory information

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 : Not determined.

Black List Chemicals : Not listed

Priority List Chemicals : Listed

Integrated pollution prevention and control list (IPPC) - Air : 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.

International regulations

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.

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

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

Skin Corr. 1B, H314
 Eye Dam. 1, H318
 Skin Sens. 1, H317

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

Classification	Justification
Skin Corr. 1B, H314	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method

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SECTION 16: Other information

Full text of abbreviated H statements : H302 Harmful if swallowed.
 H311 Toxic in contact with skin.
 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.
 H400 Very toxic to aquatic life.
 H412 Harmful to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS] : Acute Tox. 3, H311 ACUTE TOXICITY: SKIN - Category 3
 Acute Tox. 4, H302 ACUTE TOXICITY: ORAL - Category 4
 Acute Tox. 4, H312 ACUTE TOXICITY: SKIN - Category 4
 Acute Tox. 4, H332 ACUTE TOXICITY: INHALATION - Category 4
 Aquatic Acute 1, H400 AQUATIC TOXICITY (ACUTE) - Category 1
 Aquatic Chronic 3, H412 AQUATIC TOXICITY (CHRONIC) - 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 Sens. 1, H317 SKIN SENSITIZATION - Category 1

Full text of abbreviated R phrases : R24- Toxic in contact with skin.
 R21- Harmful in contact with skin.
 R22- Harmful if swallowed.
 R21/22- Harmful in contact with skin and if swallowed.
 R34- Causes burns.
 R41- Risk of serious damage to eyes.
 R36- Irritating to eyes.
 R38- Irritating to skin.
 R43- May cause sensitisation by skin contact.
 R50- Very toxic to aquatic organisms.

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

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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.

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SECTION 16: Other information