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Revised: 24/09/2024

Version: 6 (Replaced 5)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

- 1.1 Product identifier:** Treadmaster Marine Epoxy Part B
- Other means of identification:**
UFI: 34A0-M03P-200T-FEFG
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**
Relevant uses: Adhesive. For professional users/industrial user only.
Uses advised against: All uses not specified in this section or in section 7.3
- 1.3 Details of the supplier of the safety data sheet:**
Tiflex Ltd
Tiflex House, Trebargie Water
PL14 4NB Liskeard - Cornwall - United Kingdom
Phone: +44 (0) 1579 320 808 - Fax: +44 (0) 1579 320 802
sward@tiflex.co.uk
- 1.4 Emergency telephone number:** +44 (0) 1579 320 808 (NOT 24HRS - 9am-5pm Mon-Thurs, 9am-4pm Fri)

SECTION 2: HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture:**
GB CLP Regulation (UK S.I. 2019/720 and UK S.I. 2020/1567):
Classification of this product has been carried out in accordance with GB CLP Regulation (UK S.I. 2019/720 and UK S.I. 2020/1567).
Acute Tox. 4: Acute inhalation toxicity, Category 4, H332
Aquatic Chronic 2: Hazardous to the aquatic environment, long-term hazard, Category 2, H411
Eye Dam. 1: Serious eye damage, Category 1, H318
Skin Corr. 1B: Skin corrosion, Category 1B, H314
Skin Sens. 1A: Sensitisation, skin, Category 1A, H317
- 2.2 Label elements:**
GB CLP Regulation (UK S.I. 2019/720 and UK S.I. 2020/1567):
Danger
- 
- Hazard statements:**
Acute Tox. 4: H332 - Harmful if inhaled.
Aquatic Chronic 2: H411 - Toxic to aquatic life with long lasting effects.
Skin Corr. 1B: H314 - Causes severe skin burns and eye damage.
Skin Sens. 1A: H317 - May cause an allergic skin reaction.
- Precautionary statements:**
P280: Wear protective gloves/protective clothing/respiratory protection/eye protection/protective footwear.
P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER/doctor.
P501: Dispose of contents/ container in accordance with local/regional/national/international regulation.
- Substances that contribute to the classification**
Fatty acids C18 unsat, reaction products with tetraethylenepentamine; benzyl alcohol; 1,3-Cyclohexanedimethanamine; 2-piperazin-1-ylethylamine; Amines, polyethylenepoly-, tetraethylenepentamine fraction
- 2.3 Other hazards:**
Product does not meet PBT/vPvB criteria

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

3.1 Substance:

Non-applicable

3.2 Mixture:

Chemical description: Mixture composed of additives and epoxy polymers

Components:

In accordance with Annex II of The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020, the product contains:

Identification	Chemical name/Classification	Concentration
CAS: 1226892-45-0	Fatty acids C18 unsat, reaction products with tetraethylenepentamine Aquatic Acute 1: H400; Aquatic Chronic 1: H410; Eye Dam. 1: H318; Skin Corr. 1C: H314; Skin Sens. 1A: H317 - Danger	10 - <25 %
CAS: 100-51-6	benzyl alcohol Acute Tox. 4: H302+H332 - Warning	5 - <10 %
CAS: 2579-20-6	1,3-Cyclohexanedimethanamine Acute Tox. 4: H302+H312; Aquatic Chronic 3: H412; Eye Dam. 1: H318; Skin Corr. 1A: H314 - Danger	1 - <5 %
CAS: 140-31-8	2-piperazin-1-ylethylamine Acute Tox. 4: H302+H312; Aquatic Chronic 3: H412; Skin Corr. 1B: H314; Skin Sens. 1: H317 - Danger	1 - <5 %
CAS: 90640-66-7	Amines, polyethylenepoly-, tetraethylenepentamine fraction Acute Tox. 4: H302+H312; Aquatic Chronic 2: H411; Skin Corr. 1B: H314; Skin Sens. 1: H317 - Danger	1 - <5 %
CAS: 872-50-4	N-methyl-2-pyrrolidone Eye Irrit. 2: H319; Repr. 1B: H360D; Skin Irrit. 2: H315; STOT SE 3: H335 - Danger	0.1 - <1 %

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

Acute toxicity estimate for the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or as determined in accordance with Annex I to that Regulation:

Identification	Acute toxicity		Genus
benzyl alcohol CAS: 100-51-6	LD50 oral	500 mg/kg	Rat
	LD50 dermal	Not relevant	
	LC50 inhalation	11 mg/L (ATEi)	
1,3-Cyclohexanedimethanamine CAS: 2579-20-6	LD50 oral	700 mg/kg	Rat
	LD50 dermal	1700 mg/kg	Rabbit
	LC50 inhalation	Not relevant	
2-piperazin-1-ylethylamine CAS: 140-31-8	LD50 oral	500 mg/kg	
	LD50 dermal	1100 mg/kg (ATEi)	
	LC50 inhalation	Not relevant	
Amines, polyethylenepoly-, tetraethylenepentamine fraction CAS: 90640-66-7	LD50 oral	1861 mg/kg	Rat
	LD50 dermal	1465 mg/kg	Rabbit
	LC50 inhalation	Not relevant	

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures:

Request medical assistance immediately, showing the SDS of this product.

By inhalation:

Remove the person affected from the area of exposure, provide with fresh air and keep at rest. In serious cases such as cardiorespiratory failure, artificial resuscitation techniques will be necessary (mouth to mouth resuscitation, cardiac massage, oxygen supply, etc.) requiring immediate medical assistance.

By skin contact:

Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.

By eye contact:

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SECTION 4: FIRST AID MEASURES (continued)

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, in which case this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Request immediate medical assistance, showing the SDS of this product. Do not induce vomiting, because its expulsion from the stomach can be hazardous to the mucus of the main digestive tract, and also risk damage to the respiratory system through inhalation. Rinse out the mouth and throat, as they may have been affected during ingestion. In the case of loss of consciousness do not administer anything orally unless supervised by a doctor. Keep the person affected at rest.

4.2 Most important symptoms and effects, both acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

4.3 Indication of any immediate medical attention and special treatment needed:

Not relevant

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media:

Product is non-flammable under normal conditions of storage, handling and use. In the case of combustion as a result of improper handling, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems.

Unsuitable extinguishing media:

Non-applicable

5.2 Special hazards arising from the substance or mixture:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Advice for firefighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and self-contained breathing apparatus (SCBA). Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...).

Additional provisions:

Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Eliminate all sources of ignition. In case of fire, cool the storage containers and tanks for products susceptible to combustion, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilled product (See section 8). Evacuate the area and keep out those who do not have protection.

For emergency responders:

Wear protective equipment. Keep unprotected persons away. See section 8.

6.2 Environmental precautions:

Avoid at all cost any type of spillage into an aqueous medium. Contain the product absorbed appropriately in hermetically sealed containers. Notify the relevant authority in case of exposure to the general public or the environment.

6.3 Methods and material for containment and cleaning up:

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

6.4 Reference to other sections:

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SECTION 6: ACCIDENTAL RELEASE MEASURES (continued)

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.- General precautions for safe use

Comply with the current legislation concerning the prevention of industrial risks with regards manually handling weights. Maintain order, cleanliness and dispose of using safe methods (section 6).

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, handling and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations on general occupational hygiene

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

Due to the danger of this product for the environment it is recommended to use it within an area containing contamination control barriers in case of spillage, as well as having absorbent material in close proximity.

7.2 Conditions for safe storage, including any incompatibilities:

A.- Specific storage requirements

Store in a cool, dry, well-ventilated location

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be assessed in the workplace:

EH40/2005 Workplace exposure limits, fourth edition, published 2020:

Identification	Occupational exposure limits		
N-methyl-2-pyrrolidone ⁽¹⁾ CAS: 872-50-4	WEL (8h)	10 ppm	40 mg/m ³
	WEL (15 min)	20 ppm	80 mg/m ³
Limestone CAS: 1317-65-3	WEL (8h)		4 mg/m ³
	WEL (15 min)		
Kaolin CAS: 1332-58-7	WEL (8h)		2 mg/m ³
	WEL (15 min)		

⁽¹⁾ Skin

DNEL (Workers):

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
Fatty acids C18 unsat, reaction products with tetraethylenepentamine CAS: 1226892-45-0 EC: 629-725-6	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	1.4 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	9.87 mg/m ³	Not relevant
benzyl alcohol CAS: 100-51-6 EC: 202-859-9	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	40 mg/kg	Not relevant	8 mg/kg	Not relevant
	Inhalation	110 mg/m ³	Not relevant	22 mg/m ³	Not relevant

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
1,3-Cyclohexanedimethanamine CAS: 2579-20-6 EC: 219-941-5	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	25.2 mg/kg	Not relevant	0.1 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	Not relevant	0.00947 mg/m ³
2-piperazin-1-ylethylamine CAS: 140-31-8 EC: 205-411-0	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	3.33 mg/kg	Not relevant
	Inhalation	10.6 mg/m ³	80 mg/m ³	10.6 mg/m ³	0.015 mg/m ³
Amines, polyethylenepoly-, tetraethylenepentamine fraction CAS: 90640-66-7 EC: 292-587-7	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	Not relevant	Not relevant
	Inhalation	Not relevant	Not relevant	0.82 mg/m ³	Not relevant
N-methyl-2-pyrrolidone CAS: 872-50-4 EC: 212-828-1	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	4.8 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	14.4 mg/m ³	40 mg/m ³

DNEL (General population):

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
Fatty acids C18 unsat, reaction products with tetraethylenepentamine CAS: 1226892-45-0 EC: 629-725-6	Oral	Not relevant	Not relevant	0.5 mg/kg	Not relevant
	Dermal	Not relevant	Not relevant	0.5 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	1.74 mg/m ³	Not relevant
benzyl alcohol CAS: 100-51-6 EC: 202-859-9	Oral	20 mg/kg	Not relevant	4 mg/kg	Not relevant
	Dermal	20 mg/kg	Not relevant	4 mg/kg	Not relevant
	Inhalation	27 mg/m ³	Not relevant	5.4 mg/m ³	Not relevant
Amines, polyethylenepoly-, tetraethylenepentamine fraction CAS: 90640-66-7 EC: 292-587-7	Oral	Not relevant	Not relevant	0.21 mg/kg	Not relevant
	Dermal	Not relevant	Not relevant	Not relevant	Not relevant
	Inhalation	Not relevant	Not relevant	0.14 mg/m ³	Not relevant
N-methyl-2-pyrrolidone CAS: 872-50-4 EC: 212-828-1	Oral	Not relevant	Not relevant	0.85 mg/kg	Not relevant
	Dermal	Not relevant	Not relevant	2.4 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	3.6 mg/m ³	4.5 mg/m ³

PNEC:

Identification					
Fatty acids C18 unsat, reaction products with tetraethylenepentamine CAS: 1226892-45-0 EC: 629-725-6	STP	2.3 mg/L	Fresh water	0.0307 mg/L	
	Soil	9.44 mg/kg	Marine water	0.00307 mg/L	
	Intermittent	0.00612 mg/L	Sediment (Fresh water)	119.8 mg/kg	
	Oral	0.02 g/kg	Sediment (Marine water)	11.98 mg/kg	
benzyl alcohol CAS: 100-51-6 EC: 202-859-9	STP	39 mg/L	Fresh water	1 mg/L	
	Soil	0.456 mg/kg	Marine water	0.1 mg/L	
	Intermittent	2.3 mg/L	Sediment (Fresh water)	5.27 mg/kg	
	Oral	Not relevant	Sediment (Marine water)	0.527 mg/kg	
1,3-Cyclohexanedimethanamine CAS: 2579-20-6 EC: 219-941-5	STP	10 mg/L	Fresh water	0.033 mg/L	
	Soil	0.024 mg/kg	Marine water	0.003 mg/L	
	Intermittent	0.331 mg/L	Sediment (Fresh water)	0.218 mg/kg	
	Oral	Not relevant	Sediment (Marine water)	0.022 mg/kg	
2-piperazin-1-ylethylamine CAS: 140-31-8 EC: 205-411-0	STP	250 mg/L	Fresh water	0.058 mg/L	
	Soil	1 mg/kg	Marine water	0.006 mg/L	
	Intermittent	0.58 mg/L	Sediment (Fresh water)	215 mg/kg	
	Oral	Not relevant	Sediment (Marine water)	21.5 mg/kg	
Amines, polyethylenepoly-, tetraethylenepentamine fraction CAS: 90640-66-7 EC: 292-587-7	STP	4.6 mg/L	Fresh water	0.01 mg/L	
	Soil	2.5 mg/kg	Marine water	0.001 mg/L	
	Intermittent	0.068 mg/L	Sediment (Fresh water)	3.198 mg/kg	
	Oral	Not relevant	Sediment (Marine water)	0.32 mg/kg	

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Identification				
N-methyl-2-pyrrolidone CAS: 872-50-4 EC: 212-828-1	STP	10 mg/L	Fresh water	0.25 mg/L
	Soil	0.07 mg/kg	Marine water	0.025 mg/L
	Intermittent	5 mg/L	Sediment (Fresh water)	1.09 mg/kg
	Oral	Not relevant	Sediment (Marine water)	0.109 mg/kg

8.2 Exposure controls:

A.- Individual protection measures, such as personal protective equipment

As a preventative measure it is recommended to use basic Personal Protective Equipment, with the corresponding <<UKCA marking>> or <<CE marking>>. For more information on Personal Protective Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

B.- Respiratory protection

Pictogram	PPE	Remarks
 Mandatory respiratory tract protection	Filter mask for gases and vapours (Filter type: A2)	Replace when there is a taste or smell of the contaminant inside the face mask. If the contaminant comes with warnings it is recommended to use isolation equipment.

C.- Specific protection for the hands

Pictogram	PPE	Remarks
 Mandatory hand protection	Chemical protective gloves	Replace the gloves at any sign of deterioration.

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.

D.- Eye and face protection

Pictogram	PPE	Remarks
 Mandatory face protection	Panoramic glasses against splash/projections.	Clean daily and disinfect periodically according to the manufacturer's instructions. Use if there is a risk of splashing.

E.- Body protection

Pictogram	PPE	Remarks
 Mandatory complete body protection	Disposable clothing for protection against chemical risks	For professional use only. Clean periodically according to the manufacturer's instructions.
 Mandatory foot protection	Safety footwear for protection against chemical risk	Replace boots at any sign of deterioration.

F.- Additional emergency measures

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

Environmental exposure controls:

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

The Volatile Organic Compounds in Paints, Varnishes and Vehicle Refinishing Products Regulations 2012:

V.O.C. (Supply): 9.9 % weight

V.O.C. density at 20 °C: Not relevant

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 20 °C:	Liquid
Appearance:	Opaque
Colour:	Beige
Odour:	Not available
Odour threshold:	Not relevant *

Volatility:

Boiling point at atmospheric pressure:	Not relevant *
Vapour pressure at 20 °C:	11 Pa
Vapour pressure at 50 °C:	101.85 Pa (0.1 kPa)
Evaporation rate at 20 °C:	Not relevant *

Product description:

Density at 20 °C:	Not relevant *
Relative density at 20 °C:	~1.3
Dynamic viscosity at 20 °C:	>100000 cP
Kinematic viscosity at 20 °C:	>20.5 mm ² /s
Kinematic viscosity at 40 °C:	Not relevant *
Concentration:	Not relevant *
pH:	Not relevant *
Vapour density at 20 °C:	Not relevant *
Partition coefficient n-octanol/water 20 °C:	Not relevant *
Solubility in water at 20 °C:	Not relevant *
Solubility properties:	Not relevant *
Decomposition temperature:	Not relevant *
Melting point/freezing point:	Not relevant *

Flammability:

Flash Point:	Non Flammable (>60 °C)
Flammability (solid, gas):	Not relevant *
Autoignition temperature:	330 °C
Lower flammability limit:	Not relevant *
Upper flammability limit:	Not relevant *

Particle characteristics:

Median equivalent diameter:	Non-applicable
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9.2 Other information:

Information with regard to physical hazard classes:

*Not relevant due to the nature of the product, not providing information property of its hazards.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Explosive properties:	Not relevant *
Oxidising properties:	Not relevant *
Corrosive to metals:	Not relevant *
Heat of combustion:	Not relevant *
Aerosols-total percentage (by mass) of flammable components:	Not relevant *
Other safety characteristics:	
Surface tension at 20 °C:	Not relevant *
Refraction index:	Not relevant *

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7 from Safety Data Sheet.

10.2 Chemical stability:

Chemically stable under the indicated conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Precaution	Not applicable	Avoid alkalis or strong bases

10.6 Hazardous decomposition products:

Contains substances which require external energy for spontaneous decomposition. Form explosive peroxides when distilled, evaporated or otherwise concentrated.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

The experimental information related to the toxicological properties of the product itself is not available

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than the recommended occupational exposure limits, adverse effects on health may result, depending on the means of exposure:

A- Ingestion (acute effect):

- Acute toxicity: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: Corrosive product, if it is swallowed causes burns destroying the tissues. For more information about secondary effects from skin contact see section 2.

B- Inhalation (acute effect):

- Acute toxicity : Exposure in high concentration can interfere with the central nervous system causing headache, dizziness, vertigo, nausea, vomiting, confusion, and in serious cases, loss of consciousness.
- Corrosivity/Irritability: Prolonged inhalation of the product is corrosive to mucous membranes and the upper respiratory tract

C- Contact with the skin and the eyes (acute effect):

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SECTION 11: TOXICOLOGICAL INFORMATION (continued)

- Contact with the skin: Above all, skin contact may occur as fabrics of all thicknesses can be destroyed, resulting in burns. For more information on the secondary effects see section 2.
- Contact with the eyes: Produces serious eye damage after contact.
- D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):
 - Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for the effects mentioned. For more information see section 3.
 - IARC: Not relevant
 - Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
 - Reproductive toxicity: Based on available data, the classification criteria are not met. However, it does contain substances classified as hazardous for this effect. For more information see section 3.
- E- Sensitizing effects:
 - Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous with sensitising effects. For more information see section 3.
 - Skin: Prolonged contact with the skin can result in episodes of allergic contact dermatitis.
- F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met. However, it contains substances classified as hazardous for inhalation. For more information see section 3.
- G- Specific target organ toxicity (STOT)-repeated exposure:
 - Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
 - Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
- H- Aspiration hazard:

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

Other information:

Not relevant

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
benzyl alcohol CAS: 100-51-6	LD50 oral	500 mg/kg (ATEi)	Rat
	LD50 dermal	2500 mg/kg	
	LC50 inhalation	11 mg/L (ATEi)	
1,3-Cyclohexanedimethanamine CAS: 2579-20-6	LD50 oral	700 mg/kg (ATEi)	Rat
	LD50 dermal	1700 mg/kg (ATEi)	Rabbit
	LC50 inhalation		
2-piperazin-1-ylethylamine CAS: 140-31-8	LD50 oral	500 mg/kg (ATEi)	
	LD50 dermal	1100 mg/kg (ATEi)	
	LC50 inhalation		
Amines, polyethylenepoly-, tetraethylenepentamine fraction CAS: 90640-66-7	LD50 oral	1861 mg/kg (ATEi)	Rat
	LD50 dermal	1465 mg/kg (ATEi)	Rabbit
	LC50 inhalation		
N-methyl-2-pyrrolidone CAS: 872-50-4	LD50 oral	>5000 mg/kg	Rat
	LD50 dermal	>5000 mg/kg	Rat
	LC50 inhalation		

SECTION 12: ECOLOGICAL INFORMATION

The experimental information related to the eco-toxicological properties of the product itself is not available
Toxic to aquatic life with long lasting effects.

12.1 Toxicity:

Acute toxicity:

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SECTION 12: ECOLOGICAL INFORMATION (continued)

Identification	Concentration		Species	Genus
Fatty acids C18 unsat, reaction products with tetraethylenepentamine CAS: 1226892-45-0	LC50	0.19 mg/L (96 h)	Danio rerio	Fish
	EC50	0.18 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	0.638 mg/L (72 h)	Raphidocelis subcapitata	Algae
benzyl alcohol CAS: 100-51-6	LC50	646 mg/L (48 h)	Leuciscus idus	Fish
	EC50	400 mg/L (24 h)	Daphnia magna	Crustacean
	EC50	79 mg/L (3 h)	Scenedesmus subspicatus	Algae
1,3-Cyclohexanedimethanamine CAS: 2579-20-6	LC50	130 mg/L (96 h)	Leuciscus idus	Fish
	EC50	33 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	30 mg/L (72 h)	Pseudokirchneriella subcapitata	Algae
2-piperazin-1-ylethylamine CAS: 140-31-8	LC50	2190 mg/L (96 h)	Pimephales promelas	Fish
	EC50	58 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	1000 mg/L (72 h)	Pseudokirchneriella subcapitata	Algae
Amines, polyethylenepoly-, tetraethylenepentamine fraction CAS: 90640-66-7	LC50	Not relevant		
	EC50	Not relevant		
	EC50	6.8 mg/L (72 h)	Selenastrum capricornutum	Algae
N-methyl-2-pyrrolidone CAS: 872-50-4	LC50	832 mg/L (96 h)	Lepomis macrochirus	Fish
	EC50	4897 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	500 mg/L (72 h)	Scenedesmus subspicatus	Algae

Chronic toxicity:

Identification	Concentration		Species	Genus
Fatty acids C18 unsat, reaction products with tetraethylenepentamine CAS: 1226892-45-0	NOEC	Not relevant		
	NOEC	0.32 mg/L	Daphnia magna	Crustacean
benzyl alcohol CAS: 100-51-6	NOEC	48.897 mg/L	N/A	Fish
	NOEC	51 mg/L	Daphnia magna	Crustacean
N-methyl-2-pyrrolidone CAS: 872-50-4	NOEC	Not relevant		
	NOEC	12.5 mg/L	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Substance-specific information:

Identification	Degradability		Biodegradability	
Fatty acids C18 unsat, reaction products with tetraethylenepentamine CAS: 1226892-45-0	BOD5	Not relevant	Concentration	2 mg/L
	COD	Not relevant	Period	28 days
	BOD5/COD	Not relevant	% Biodegradable	24 %
benzyl alcohol CAS: 100-51-6	BOD5	Not relevant	Concentration	100 mg/L
	COD	Not relevant	Period	14 days
	BOD5/COD	Not relevant	% Biodegradable	94 %
1,3-Cyclohexanedimethanamine CAS: 2579-20-6	BOD5	Not relevant	Concentration	100 mg/L
	COD	Not relevant	Period	28 days
	BOD5/COD	Not relevant	% Biodegradable	29 %
2-piperazin-1-ylethylamine CAS: 140-31-8	BOD5	Not relevant	Concentration	30 mg/L
	COD	Not relevant	Period	28 days
	BOD5/COD	Not relevant	% Biodegradable	0 %
Amines, polyethylenepoly-, tetraethylenepentamine fraction CAS: 90640-66-7	BOD5	Not relevant	Concentration	2 mg/L
	COD	Not relevant	Period	162 days
	BOD5/COD	Not relevant	% Biodegradable	0 %
N-methyl-2-pyrrolidone CAS: 872-50-4	BOD5	1.09 g O2/g	Concentration	100 mg/L
	COD	1.6 g O2/g	Period	28 days
	BOD5/COD	0.68	% Biodegradable	73 %

12.3 Bioaccumulative potential:

Substance-specific information:

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SECTION 12: ECOLOGICAL INFORMATION (continued)

Identification	Bioaccumulation potential	
Fatty acids C18 unsat, reaction products with tetraethylenepentamine CAS: 1226892-45-0	BCF	
	Pow Log	2.2
	Potential	
benzyl alcohol CAS: 100-51-6	BCF	0.3
	Pow Log	1.1
	Potential	Low
N-methyl-2-pyrrolidone CAS: 872-50-4	BCF	0.23
	Pow Log	-0.46
	Potential	Low

12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
Fatty acids C18 unsat, reaction products with tetraethylenepentamine CAS: 1226892-45-0	Koc	7.8	Henry	Not relevant
	Conclusion	Not relevant	Dry soil	Not relevant
	Surface tension	Not relevant	Moist soil	Not relevant
benzyl alcohol CAS: 100-51-6	Koc	Not relevant	Henry	Not relevant
	Conclusion	Not relevant	Dry soil	Not relevant
	Surface tension	3.679E-2 N/m (25 °C)	Moist soil	Not relevant
1,3-Cyclohexanedimethanamine CAS: 2579-20-6	Koc	30	Henry	Not relevant
	Conclusion	Very High	Dry soil	Not relevant
	Surface tension	Not relevant	Moist soil	Not relevant
2-piperazin-1-ylethylamine CAS: 140-31-8	Koc	37000	Henry	Not relevant
	Conclusion	Immobile	Dry soil	Not relevant
	Surface tension	4.001E-2 N/m (25 °C)	Moist soil	Not relevant
Amines, polyethylenepoly-, tetraethylenepentamine fraction CAS: 90640-66-7	Koc	1590	Henry	Not relevant
	Conclusion	Low	Dry soil	Not relevant
	Surface tension	Not relevant	Moist soil	Not relevant
N-methyl-2-pyrrolidone CAS: 872-50-4	Koc	Not relevant	Henry	Not relevant
	Conclusion	Not relevant	Dry soil	Not relevant
	Surface tension	4.007E-2 N/m (25 °C)	Moist soil	Not relevant

12.5 Results of PBT and vPvB assessment:

Product does not meet PBT/vPvB criteria

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

Code	Description	Waste class
08 04 09*	waste adhesives and sealants containing organic solvents or other hazardous substances	Hazardous

Type of waste:

HP14 Ecotoxic, HP13 Sensitising, HP8 Corrosive

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations in accordance The Waste (England & Wales) Regulations 2011, 2011 No. 988. As under 15 01 of the code and in case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-hazardous residue. Waste should not be disposed of to drains. See paragraph 6.2.

Regulations related to waste management:

In accordance with Annex II of UK REACH the provisions related to waste management are stated:

UK legislation: The Waste (England & Wales) Regulations 2011.

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SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land:

With regard to ADR 2023 and RID 2023:



- 14.1 UN number:** UN2735
- 14.2 UN proper shipping name:** POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Fatty acids C18 unsat, reaction products with tetraethylenepentamine)
- 14.3 Transport hazard class(es):** 8
- Labels:** 8
- 14.4 Packing group:** III
- 14.5 Environmental hazards:** Yes
- 14.6 Special precautions for user**
- Tunnel restriction code: E
- Physico-Chemical properties: see section 9
- Limited quantities: 5 L
- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code:** Not relevant

Transport of dangerous goods by sea:

With regard to IMDG 41-22:



- 14.1 UN number:** UN2735
- 14.2 UN proper shipping name:** POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Fatty acids C18 unsat, reaction products with tetraethylenepentamine)
- 14.3 Transport hazard class(es):** 8
- Labels:** 8
- 14.4 Packing group:** III
- 14.5 Marine pollutant:** Yes
- 14.6 Special precautions for user**
- Special regulations: 223, 274
- EmS Codes: F-A, S-B
- Physico-Chemical properties: see section 9
- Limited quantities: 5 L
- Segregation group: SGG18
- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code:** Not relevant

Transport of dangerous goods by air:

With regard to IATA/ICAO 2024:



- 14.1 UN number:** UN2735
- 14.2 UN proper shipping name:** POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Fatty acids C18 unsat, reaction products with tetraethylenepentamine)
- 14.3 Transport hazard class(es):** 8
- Labels:** 8
- 14.4 Packing group:** III
- 14.5 Environmental hazards:** Yes
- 14.6 Special precautions for user**
- Physico-Chemical properties: see section 9
- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code:** Not relevant

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

- CONTINUED ON NEXT PAGE -



SECTION 15: REGULATORY INFORMATION (continued)

- Substances listed in UK candidate list of substances of very high concern (SVHCs): *N-methyl-2-pyrrolidone (872-50-4)*
- Substances listed in UK REACH Authorisation List (Annex 14): Not relevant

The Control of Major Accident Hazards Regulations 2015:

Section	Description	Lower-tier requirements	Upper-tier requirements
E2	ENVIRONMENTAL HAZARDS	200	500

Restrictions to commercialisation and the use of certain dangerous substances and mixtures (Annex XVII UK REACH, etc):

Shall not be used in:

- ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
- tricks and jokes,
- games for one or more participants, or any article intended to be used as such, even with ornamental aspects.

Contains N-methyl-2-pyrrolidone. 1. | Shall not be placed on the market as a substance on its own or in mixtures in a concentration equal to or greater than 0,3 % after 9 May 2020 unless manufacturers, importers and downstream users have included in the relevant chemical safety reports and safety data sheets, Derived No-Effect Levels (DNELs) relating to exposure of workers of 14,4 mg/m³ for exposure by inhalation and 4,8 mg/kg/day for dermal exposure. | 2. | Shall not be manufactured, or used, as a substance on its own or in mixtures in a concentration equal to or greater than 0,3 % after 9 May 2020 unless manufacturers and downstream users take the appropriate risk management measures and provide the appropriate operational conditions to ensure that exposure of workers is below the DNELs specified in paragraph 1. | 3. | By way of derogation from paragraphs 1 and 2, the obligations laid down therein shall apply from 9 May 2024 in relation to placing on the market for use, or use, as a solvent or reactant in the process of coating wires.

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as a basis for conducting workplace-specific risk assessments in order to establish the necessary risk prevention measures for the handling, use, storage and disposal of this product.

Other legislation:

The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020.

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2020.

Control of Substances Hazardous to Health Regulations 2002 (as amended)

EH40/2005 Workplace exposure limits.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with ANNEX II-The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020.

Texts of the legislative phrases mentioned in section 2:

- H314: Causes severe skin burns and eye damage.
- H318: Causes serious eye damage.
- H411: Toxic to aquatic life with long lasting effects.
- H317: May cause an allergic skin reaction.
- H332: Harmful if inhaled.

Texts of the legislative phrases mentioned in section 3:

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

GB CLP Regulation (UK S.I. 2019/720 and UK S.I. 2020/1567):



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SECTION 16: OTHER INFORMATION (continued)

Acute Tox. 4: H302+H312 - Harmful if swallowed or in contact with skin.
Acute Tox. 4: H302+H332 - Harmful if swallowed or if inhaled.
Aquatic Acute 1: H400 - Very toxic to aquatic life.
Aquatic Chronic 1: H410 - Very toxic to aquatic life with long lasting effects.
Aquatic Chronic 2: H411 - Toxic to aquatic life with long lasting effects.
Aquatic Chronic 3: H412 - Harmful to aquatic life with long lasting effects.
Eye Dam. 1: H318 - Causes serious eye damage.
Eye Irrit. 2: H319 - Causes serious eye irritation.
Repr. 1B: H360D - May damage the unborn child.
Skin Corr. 1A: H314 - Causes severe skin burns and eye damage.
Skin Corr. 1B: H314 - Causes severe skin burns and eye damage.
Skin Corr. 1C: H314 - Causes severe skin burns and eye damage.
Skin Irrit. 2: H315 - Causes skin irritation.
Skin Sens. 1: H317 - May cause an allergic skin reaction.
Skin Sens. 1A: H317 - May cause an allergic skin reaction.
STOT SE 3: H335 - May cause respiratory irritation.

Classification procedure:

Skin Corr. 1B: Calculation method
Eye Dam. 1: Calculation method
Aquatic Chronic 2: Calculation method
Skin Sens. 1A: Calculation method
Acute Tox. 4: Calculation method

Advice related to training:

Training is recommended in order to prevent industrial risks for staff using this product and to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

<http://echa.europa.eu>
<http://eur-lex.europa.eu>

Abbreviations and acronyms:

ADR: European agreement concerning the international carriage of dangerous goods by road
IMDG: International maritime dangerous goods code
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
COD: Chemical Oxygen Demand
BOD5: 5day biochemical oxygen demand
BCF: Bioconcentration factor
LD50: Lethal Dose 50
LC50: Lethal Concentration 50
EC50: Effective concentration 50
LogPOW: Octanolwater partition coefficient
Koc: Partition coefficient of organic carbon
UFI: unique formula identifier
IARC: International Agency for Research on Cancer

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation at UK, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product, it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within our awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

- END OF SAFETY DATA SHEET -