



# SAFETY DATA SHEET

Torrex Fire Upgrading AG-X Activator

Providing Practical Solutions

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

### 1.1 Product identifier

**Product name** : Torrex Fire Upgrading AG-X Activator  
**Product description** : Paint Hardener.  
**Product type** : Liquid.  
**UFI** : UPC1-E0R3-W008-56PQ

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

Identified uses	
Industrial Professional	
Uses advised against	Reason
Consumer	Product is not intended for consumer use.

### 1.3 Details of the supplier of the safety data sheet

RUST-OLEUM EUROPE  
Martin Mathys NV, Kolenbergstraat 23, B-3545 Zelem, Belgium  
Telephone no.: +32 (0) 13 460 200  
Fax no.: +32 (0) 13 460 201

Tor Coatings Limited  
Unit 21, White Rose Way, Follingsby Park, Gateshead, Tyne & Wear, NE10 8YX United Kingdom  
Telephone no.: +44 (0) 191 4106611  
Fax no.: +44 (0) 191 4920125  
enquiries@tor-coatings.com

**e-mail address of person responsible for this SDS** : rpmeurohas@rustoleum.eu

### 1.4 Emergency telephone number

**National advisory body/Poison Centre**

**Supplier**

Telephone number United Kingdom: : +44 870 8200418 / +44 2038073798  
Great Britain

Hours of operation : 24 / 7

## 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]

Acute Tox. 4, H332

Skin Irrit. 2, H315

Eye Dam. 1, H318

Skin Sens. 1, H317

STOT SE 3, H335

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the 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** : H315 - Causes skin irritation.  
H317 - May cause an allergic skin reaction.  
H318 - Causes serious eye damage.  
H332 - Harmful if inhaled.  
H335 - May cause respiratory irritation.

#### Precautionary statements

**General** : Not applicable.

**Prevention** : P271 - Use only outdoors or in a well-ventilated area.  
P280 - Wear protective gloves and eye protection:  
- gloves nitrile rubber Safety glasses with side shields.

**Response** : P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305 + P351 + P338, P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Immediately call a POISON CENTER or doctor.

**Storage** : Not applicable.

**Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Hazardous ingredients** : polyhexamethylene diisocyanate  
Poly(oxy-1,2-ethanediyl),  $\alpha$ -tridecyl- $\omega$ -hydroxy-, phosphate  
cyclohexyldimethylamine  
hexamethylene-di-isocyanate

**Supplemental label elements** : EUH204 - Contains isocyanates. May produce an allergic reaction.

**Supplemental label elements : Detergents - Regulation (EC) No 907/2006** : Not applicable.

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

**Special packaging requirements**

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## SECTION 2: Hazards identification

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

**Tactile warning of danger** : Not applicable.

### 2.3 Other hazards

**Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII**

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

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

## SECTION 3: Composition/information on ingredients

**3.2 Mixtures** : Mixture

**United Kingdom: Great Britain**

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
polyhexamethylene diisocyanate	REACH #: 01-2119485796-17 CAS: 28182-81-2 List #: 931-274-8	≥90	Acute Tox. 4, H332 Skin Sens. 1, H317 STOT SE 3, H335	ATE [Inhalation (dusts and mists)] = 1,5 mg/l	[1] [2]
Poly(oxy-1,2-ethanediyl), α-tridecyl-ω-hydroxy-, phosphate	CAS: 9046-01-9	≤5	Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 3, H412	-	[1]
cyclohexyldimethylamine	EC: 202-715-5 CAS: 98-94-2	≤3	Flam. Liq. 3, H226 Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 Skin Corr. 1B, H314 Eye Dam. 1, H318 Aquatic Chronic 2, H411	ATE [Oral] = 100 mg/kg ATE [Dermal] = 370 mg/kg ATE [Inhalation (vapours)] = 3 mg/l	[1]
hexamethylene-di-isocyanate	REACH #: 01-2119457571-37 EC: 212-485-8 CAS: 822-06-0 Index: 615-011-00-1	≤0,1	Acute Tox. 4, H302 Acute Tox. 1, H330 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335  <b>See Section 16 for the full text of the H statements declared above.</b>	ATE [Oral] = 500 mg/kg ATE [Inhalation (vapours)] = 0,05 mg/l Resp. Sens. 1, H334: C ≥ 0,5% Skin Sens. 1, H317: C ≥ 0,5%	[1] [2]

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, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

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

Type

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## SECTION 3: Composition/information on ingredients

[1] Substance classified with a health or environmental hazard

List numbers have no legal significance.

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. 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.
- 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. 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

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur

## SECTION 4: First aid measures

**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** : No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire. In case of fire, use water spray (fog), foam, dry chemical or CO<sub>2</sub>.

**Unsuitable extinguishing media** : Do not use water jet.

### 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 combustion products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
phosphorus oxides

### 5.3 Advice for firefighters

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. 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.

**Additional information** : No unusual hazard if involved in a fire.

## 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

## SECTION 6: Accidental release measures

- 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 spilled 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.

### 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. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

### 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. 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. See Section 10 for incompatible materials before handling or use.

### 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. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

### 8.1 Control parameters

- Occupational exposure limits**  
**United Kingdom: Great Britain**

## SECTION 8: Exposure controls/personal protection

Product/ingredient name	Exposure limit values
polyhexamethylene diisocyanate	<b>EH40/2005 WELs (United Kingdom (UK), 1/2020). Inhalation sensitiser.</b> STEL: 0,07 mg/m <sup>3</sup> , (as -NCO) 15 minutes. TWA: 0,02 mg/m <sup>3</sup> , (as -NCO) 8 hours.
hexamethylene-di-isocyanate	<b>EH40/2005 WELs (United Kingdom (UK), 1/2020). Inhalation sensitiser.</b> STEL: 0,07 mg/m <sup>3</sup> , (as -NCO) 15 minutes. TWA: 0,02 mg/m <sup>3</sup> , (as -NCO) 8 hours.

**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.

### DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
polyhexamethylene diisocyanate	DNEL	Short term Inhalation	1 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Inhalation	0,5 mg/m <sup>3</sup>	Workers	Local
hexamethylene-di-isocyanate	DNEL	Short term Inhalation	1 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Inhalation	0,5 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Inhalation	0,35 mg/m <sup>3</sup>	Workers	Local
	DNEL	Short term Inhalation	0,7 mg/m <sup>3</sup>	Workers	Local

### PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail	
polyhexamethylene diisocyanate	Fresh water	0,127 mg/l	-	
	Marine	0,0127 mg/l	-	
	Fresh water sediment	266700 mg/kg dwt	-	
	Marine water sediment	26670 mg/kg dwt	-	
	Soil	53182 mg/kg dwt	-	
	Sewage Treatment Plant	38,28 mg/l	-	
hexamethylene-di-isocyanate	Fresh water	0,127 mg/l	-	
	Marine	0,0127 mg/l	-	
	Sediment	266700 mg/kg dwt	-	
	Soil	53182 mg/kg dwt	-	
	Sewage Treatment Plant	38,28 mg/l	-	
	Fresh water	>0,05 mg/l	-	
	Fresh water sediment	>1,33 mg/kg	-	
	Marine water	>0,005 mg/l	-	
	Marine water sediment	>0,133 mg/kg	-	
	Sewage Treatment Plant	55,6 mg/l	-	

## SECTION 8: Exposure controls/personal protection

	Soil	>0,066 mg/kg	-
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### 8.2 Exposure controls

**Appropriate engineering controls** : Use only with adequate ventilation. 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. Use eye protection according to EN 166. 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. Recommended: safety glasses with side-shields.

#### Skin protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

The breakthrough time must be greater than the end use time of the product.

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Always ensure that gloves are free from defects and that they are stored and used correctly.

The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance.

Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. > 8 hours (breakthrough time): nitrile rubber (0.5mm).

The recommendation for the type or types of glove to use when handling this product is based on information from the following source: EN374. The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

**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. Recommended: Personnel should wear antistatic clothing made of natural fibres or of high-temperature-resistant synthetic fibres.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: organic vapour (Type AX) and particulate filter (EN 140)



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## SECTION 8: Exposure controls/personal protection

**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

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### 9.1 Information on basic physical and chemical properties

**Physical state** : Liquid.  
**Colour** : Various  
**Odour** : Not available.  
**Odour threshold** : Not available.

**Melting point/freezing point** : Not available.  
**Initial boiling point and boiling range** : Not relevant due to nature of the product.  
**Flammability (solid, gas)** : Non-flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and shocks and mechanical impacts.  
**Lower and upper explosion limit** : Not available.  
**Flash point** : Closed cup: 150°C (302°F) [Literature]  
**Auto-ignition temperature** : Not relevant due to nature of the product.  
**Decomposition temperature** : Not available.  
**pH** : Not applicable.  
**pH : Justification** : Product is non-soluble (in water).  
**Viscosity** : Dynamic (room temperature): 700 mPa·s [ICI Rotothinner]  
Kinematic (40°C): >20,5 mm<sup>2</sup>/s  
**Solubility(ies)** :

Media	Result
cold water	Not soluble
hot water	Not soluble

**Solubility in water** : Not available.  
**Miscible with water** : No.  
**Partition coefficient: n-octanol/ water** : Not applicable.  
**Vapour pressure** : Not relevant due to nature of the product.  
**Evaporation rate** : Not available.  
**Relative density** : Not available.  
**Density** : 1,15 g/cm<sup>3</sup> [20°C (68°F)] [DIN 53217]  
**Vapour density** : Not available.  
**Explosive properties** : Non-explosive in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and shocks and mechanical impacts.  
**Oxidising properties** : Not available.  
**Particle characteristics**  
**Median particle size** : Not applicable.

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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. If involved in a fire, toxic gases including CO, CO<sub>2</sub> and smoke can be generated.

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
polyhexamethylene diisocyanate	LC50 Inhalation Dusts and mists	Rat - Female	0,39 mg/l	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
Poly(oxy-1,2-ethanediyl), α-tridecyl-ω-hydroxy-, phosphate	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
cyclohexyldimethylamine	LD50 Dermal	Rat	370 mg/kg	-
	LD50 Oral	Rat	348 mg/kg	-
	LD50 Oral	Rat	348 mg/kg	-
hexamethylene-di-isocyanate	LC50 Inhalation Dusts and mists	Rat	0,124 mg/m <sup>3</sup>	4 hours
	LCLo Inhalation Dusts and mists	Rat	60 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	>7000 mg/kg	-

**Conclusion/Summary** : Harmful if inhaled.

#### Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Torrex Fire Upgrading AG-X Activator	N/A	N/A	N/A	11	N/A
polyhexamethylene diisocyanate	N/A	N/A	N/A	N/A	1,5
cyclohexyldimethylamine	100	370	N/A	3	N/A
hexamethylene-di-isocyanate	500	N/A	N/A	0,05	N/A

#### Irritation/Corrosion

## SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
polyhexamethylene diisocyanate	Eyes - Cornea opacity	Rabbit	1	-	-
	Eyes - Moderate irritant	Rabbit	-	100 milligrams	-
	Skin - Oedema	Rabbit	1	4 hours	-
hexamethylene-di-isocyanate	Skin - Moderate irritant	Rabbit	-	500 milligrams	-
	Eyes - Redness of the conjunctivae	Rabbit	3	-	-
	Skin - Erythema/Eschar	Rabbit	3	-	-

### Conclusion/Summary

- Skin** : Causes skin irritation.  
**Eyes** : Causes serious eye damage.  
**Respiratory** : May cause respiratory irritation.

### Sensitisation

Product/ingredient name	Route of exposure	Species	Result
polyhexamethylene diisocyanate	Respiratory	Guinea pig	Not sensitizing
	skin	Guinea pig	Sensitising
hexamethylene-di-isocyanate	skin	Mouse	Sensitising
	Respiratory	Guinea pig	Sensitising
	skin	Guinea pig	Sensitising

### Conclusion/Summary

- Skin** : May cause an allergic skin reaction.  
**Respiratory** : Based on available data, the classification criteria are not met.

### Mutagenicity

Product/ingredient name	Test	Experiment	Result
polyhexamethylene diisocyanate	OECD 471	Subject: Bacteria	Negative
	OECD 476	Subject: Mammalian-Animal	Negative
hexamethylene-di-isocyanate	OECD 471	Experiment: In vitro Subject: Bacteria	Negative
	OECD 476	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OECD 474	Experiment: In vivo Subject: Mammalian-Animal	Negative

- Conclusion/Summary** : Based on available data, the classification criteria are not met.

### Carcinogenicity

- Conclusion/Summary** : Based on available data, the classification criteria are not met.

### Reproductive toxicity

- Conclusion/Summary** : Based on available data, the classification criteria are not met.

### Teratogenicity

- Conclusion/Summary** : Based on available data, the classification criteria are not met.

### Specific target organ toxicity (single exposure)

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## SECTION 11: Toxicological information

Product/ingredient name	Category	Route of exposure	Target organs
hexamethylene-1,6-diiisocyanate homopolymer	Category 3	Not applicable.	Respiratory tract irritation
hexamethylene-di-isocyanate	Category 3	Not applicable.	Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

**Information on likely routes of exposure** : Routes of entry anticipated: Dermal, Inhalation.

### Potential acute health effects

- Eye contact** : Causes serious eye damage.  
**Inhalation** : Harmful if inhaled. May cause respiratory irritation.  
**Skin contact** : Causes skin irritation. May cause an allergic skin reaction.  
**Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur
- Ingestion** : Adverse symptoms may include the following:  
stomach pains

### Delayed and immediate effects as well as 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

## SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
polyhexamethylene diisocyanate	Sub-chronic LC50 Inhalation Dusts and mists	Rat	14,7 mg/m <sup>3</sup>	6 hours; 5 days per week Intermittent
	Sub-acute LC50 Inhalation Dusts and mists	Rat	89,9 mg/m <sup>3</sup>	6 hours; 5 days per week Intermittent
	Sub-acute LCLo Inhalation Dusts and mists	Rat	4,3 mg/m <sup>3</sup>	6 hours; 5 days per week Intermittent
	Chronic NOAEL Inhalation Dusts and mists	Rat	3,3 mg/m <sup>3</sup>	6 hours; 5 days per week Intermittent
hexamethylene-di-isocyanate	Chronic LCLo Inhalation Vapour	Rat	0,025 p.p.m.	30 days; 6 hours per day Intermittent

<b>Conclusion/Summary</b>	: Based on available data, the classification criteria are not met.
<b>General</b>	: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
<b>Carcinogenicity</b>	: No known significant effects or critical hazards.
<b>Mutagenicity</b>	: No known significant effects or critical hazards.
<b>Reproductive toxicity</b>	: No known significant effects or critical hazards.

### 11.2 Information on other hazards

#### 11.2.1 Endocrine disrupting properties

Not available.

#### 11.2.2 Other information

Not available.

## SECTION 12: Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
polyhexamethylene diisocyanate	Acute EC50 >10000 mg/l	Bacteria	3 hours
	Acute EC50 >100 mg/l Acute IC50 >1000 mg/l	Daphnia spec. Algae - Scenedesmus subspicatus	48 hours 72 hours
	Acute LC50 >100 mg/l	Fish	96 hours
hexamethylene-di-isocyanate	Acute EC50 >77,4 mg/l Acute EC50 842 mg/l	Algae Bacteria	72 hours 3 hours

<b>Conclusion/Summary</b>	: Based on available data, the classification criteria are not met.
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### 12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
polyhexamethylene diisocyanate	OECD 301C	2 % - Not readily - 28 days	-	-
hexamethylene-di-isocyanate	OECD 301F EU 301F Ready	42 % - 10 days 42 % - 28 days	- -	- -
	Biodegradability - Manometric Respirometry Test			

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## SECTION 12: Ecological information

**Conclusion/Summary** : This product has not been tested for biodegradation. Based on available data, the classification criteria are not met.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
polyhexamethylene diisocyanate	Fresh water 0,32 days, 23°C	50%; 0.49 day(s)	Not readily
hexamethylene-di-isocyanate	-	-	Not readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
polyhexamethylene diisocyanate	5,54	367,7	low
cyclohexyldimethylamine	2,01	35,66	low
hexamethylene-di-isocyanate	0,02	57,63	low

### 12.4 Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility** : Nonvolatile liquid.

### 12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

### 12.6 Endocrine disrupting properties

Not available.

### 12.7 Other adverse effects

No known significant effects or critical hazards.

## SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance.

### 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
08 01 11*	waste paint and varnish containing organic solvents or other hazardous substances

**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.

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## SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
<b>14.1 UN number or ID number</b>	Not regulated.	Not regulated.	Not regulated.	Not regulated.
<b>14.2 UN proper shipping name</b>	-	-	-	-
<b>14.3 Transport hazard class(es)</b>	-	-	-	-
<b>14.4 Packing group</b>	-	-	-	-
<b>14.5 Environmental hazards</b>	No.	No.	No.	No.

**14.6 Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**14.7 Transport in bulk according to IMO instruments** : Not available.

## SECTION 15: Regulatory information

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

Other EU regulations

**VOC for Ready-for-Use Mixture** : 2004/42/EC - IIA/j: 500g/l (2010). <= 25g/l VOC.

**Industrial emissions (integrated pollution prevention and control) - Air** : Not listed

**Industrial emissions (integrated pollution prevention and control) - Water** : Not listed

#### United Kingdom: Great Britain

#### UK (GB) /REACH

#### 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.

#### Ozone depleting substances

Not listed.

#### Prior Informed Consent (PIC)

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## SECTION 15: Regulatory information

Not listed.

### Persistent Organic Pollutants

Not listed.

**Aerosol dispensers** :

### Seveso Directive

This product is not controlled under the Seveso Directive.

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

### International regulations

#### Stockholm Convention on Persistent Organic Pollutants

List name	Ingredient name	Status
Not listed.		

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

List name	Ingredient name	Status
Not listed.		

**CN code** : 3209 90 00 00

### Inventory list

- Australia** : All components are listed or exempted.
- Canada** : All components are listed or exempted.
- China** : All components are listed or exempted.
- Eurasian Economic Union** : **Russian Federation inventory**: Not determined.
- Japan** : **Japan inventory (CSCL)**: Not determined.  
**Japan inventory (ISHL)**: Not determined.
- New Zealand** : All components are listed or exempted.
- Philippines** : All components are listed or exempted.
- Republic of Korea** : All components are listed or exempted.
- Taiwan** : All components are listed or exempted.
- Thailand** : Not determined.
- Turkey** : Not determined.
- United States** : Not determined.
- Viet Nam** : Not determined.

**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]  
 DMEL = Derived Minimal Effect Level  
 DNEL = Derived No Effect Level  
 EUH statement = CLP-specific Hazard statement  
 N/A = Not available  
 PBT = Persistent, Bioaccumulative and Toxic  
 PNEC = Predicted No Effect Concentration  
 RRN = REACH Registration Number  
 SGG = Segregation Group  
 vPvB = Very Persistent and Very Bioaccumulative

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

Classification	Justification
Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335	On basis of test data Expert judgment Expert judgment Expert judgment Expert judgment

### Full text of abbreviated H statements

#### United Kingdom: Great Britain

### Full text of abbreviated H statements

: H226 Flammable liquid and vapour.  
 H301 Toxic if swallowed.  
 H302 Harmful if swallowed.  
 H311 Toxic in contact with skin.  
 H314 Causes severe skin burns and eye damage.  
 H315 Causes skin irritation.  
 H317 May cause an allergic skin reaction.  
 H318 Causes serious eye damage.  
 H319 Causes serious eye irritation.  
 H330 Fatal if inhaled.  
 H331 Toxic if inhaled.  
 H332 Harmful if inhaled.  
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 H335 May cause respiratory irritation.  
 H411 Toxic to aquatic life with long lasting effects.  
 H412 Harmful to aquatic life with long lasting effects.

### Full text of classifications [CLP/GHS]

: Acute Tox. 1 ACUTE TOXICITY - Category 1  
 Acute Tox. 3 ACUTE TOXICITY - Category 3  
 Acute Tox. 4 ACUTE TOXICITY - Category 4  
 Aquatic Chronic 2 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2  
 Aquatic Chronic 3 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3  
 Eye Dam. 1 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1  
 Eye Irrit. 2 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2  
 Flam. Liq. 3 FLAMMABLE LIQUIDS - Category 3  
 Resp. Sens. 1 RESPIRATORY SENSITISATION - Category 1  
 Skin Corr. 1B SKIN CORROSION/IRRITATION - Category 1B  
 Skin Irrit. 2 SKIN CORROSION/IRRITATION - Category 2  
 Skin Sens. 1 SKIN SENSITISATION - Category 1  
 STOT SE 3 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

### Date of printing

: 31/08/2022

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## SECTION 16: Other information

**Date of issue/ Date of revision** : 31/08/2022

**Date of previous issue** : 31/08/2022

**Version** : 3

### Notice to reader

**IMPORTANT NOTE:** The information in this Safety Data Sheet is based on the present state of knowledge and current legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications. The information contained in this data sheet (as may be amended from time to time) is not intended to be exhaustive and is presented in good faith and believed to be correct as of the date on which it is prepared. It is the user's responsibility to verify that this data sheet is current prior to using the product to which it relates. Persons using the information must make their own determinations as to the suitability of the relevant product for their purposes prior to use. Where those purposes are other than as specifically recommended in this safety data sheet, then the user uses the product at their own risk.

**MANUFACTURER'S DISCLAIMER:** the conditions, methods and factors affecting the handling, storage, application, use and disposal of the product are not under the control and knowledge of the manufacturer. Therefore the manufacturer does not assume responsibility for any adverse events which may occur in the handling, storage, application, use, misuse or disposal of the product and, so far as permitted by applicable law, the manufacturer expressly disclaims liability for any and all loss, damages and/or expenses arising out of or in any way connected to the storage, handling, use or disposal of the product. Safe handling, storage, use and disposal are the responsibility of the users. Users must comply with all applicable health and safety laws.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.