

# SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by UK REACH Regulation SI 2019/758

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

### 1.1 Product identifier

**Product identifier** : VOC 10-20  
**Product name** : STANDOX HARDENER VOC 10-20  
**Product type** : Liquid.  
**Other means of identification** : 4024669793123; 4024669793192; 6922978635937  
**Date of issue/ Date of revision** : 22 October 2024  
**Version** : 1.14  
**Date of previous issue** : 8 September 2024

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

**Identified uses** : Coating component.  
**Uses advised against** : Not for sale to or use by consumers.

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

Axalta Coating Systems Germany GmbH & Co. KG  
Christbusch 25  
DE 42285 Wuppertal  
+49 (0)202 529-0  
**e-mail address of person responsible for this SDS** : sds-competence@axalta.com

### 1.4 Emergency telephone number

#### Supplier

**Telephone number** : +(44)-870-8200418  
**Hours of operation** :

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition** : Mixture

#### Classification according to UK CLP/GHS

Flam. Liq. 3, H226  
Acute Tox. 4, H332  
Skin Sens. 1, H317  
STOT SE 3, H335  
Aquatic Chronic 3, H412



The product is classified as hazardous according to UK CLP Regulation SI 2019/720 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

SECTION 2: Hazards identification

Hazard pictograms	:	 
Signal word	:	Warning
Contains	:	Hexamethylene diisocyanate, oligomers 3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers hexamethylene-di-isocyanate
Hazard statements	:	H226 - Flammable liquid and vapour. H317 - May cause an allergic skin reaction. H332 - Harmful if inhaled. H335 - May cause respiratory irritation. H412 - Harmful to aquatic life with long lasting effects.
<b>Precautionary statements</b>		
Prevention	:	P280 - Wear protective gloves. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P273 - Avoid release to the environment. P261 - Avoid breathing vapour.
Response	:	P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell. P302 + P352 - IF ON SKIN: Wash with plenty of water.
Storage	:	Not applicable.
Disposal	:	Not applicable.
Supplemental label elements	:	EUH204 - Contains isocyanates. May produce an allergic reaction.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	:	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
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Product/ingredient name	Identifiers	%	Classification	Type
Hexamethylene diisocyanate, oligomers	REACH #: 01-2119485796-17 EC: 931-274-8 CAS: 28182-81-2	≥50 - ≤75	Acute Tox. 4, H332 Skin Sens. 1, H317 STOT SE 3, H335	[1] [2]
n-butyl acetate	REACH #: 01-2119485493-29 EC: 204-658-1 CAS: 123-86-4	≥10 - <17	Flam. Liq. 3, H226 STOT SE 3, H336 EUH066	[1] [2]
Reaction mass of ethylbenzene and xylene	REACH #: 01-2119539452-40 EC: 905-588-0	<10	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]

FG-69603 XK-203 ACTIVATOR				
SECTION 3: Composition/information on ingredients				
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers	REACH #: 01-2119488734-24 EC: 931-312-3 CAS: 53880-05-0	≤10	STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 3, H412 Skin Sens. 1B, H317 STOT SE 3, H335	[1] [2]
Hydrocarbons, C9, aromatics	REACH #: 01-2119455851-35 EC: 918-668-5	≤3.5	Flam. Liq. 3, H226 STOT SE 3, H335 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 EUH066	[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>	[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.

Type

[1] Substance classified with a physical, health or environmental hazard

[2] Substance with a workplace exposure limit

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

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
Inhalation	: 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. Get medical attention. If necessary, call a poison center or physician. 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	: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

## SECTION 4: First aid measures

- Ingestion** : 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. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. 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** : No specific data.
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- 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** : No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media** : Recommended: alcohol-resistant foam, CO<sub>2</sub>, powders, water spray or mist.
- Unsuitable extinguishing media** : Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.
- Hazardous combustion products** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen, hydrogen cyanide, monomeric isocyanates.

### 5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses.
- Special protective equipment for fire-fighters** : Appropriate breathing apparatus may be required.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Exclude sources of ignition and ventilate the area. Avoid breathing vapour or mist. Refer to protective measures listed in sections 7 and 8.
- 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** : Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

### 6.3 Methods and material for containment and cleaning up

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 (see Section 13). Place in a suitable container. The contaminated area should be cleaned immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises (by volume): water (45 parts), ethanol or isopropyl alcohol (50 parts) and concentrated (d: 0,880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) and water (95 parts). Add the same decontaminant to the remnants and let stand for several days until no further reaction in an unsealed container. Once this stage is reached, close container and dispose of according to local regulations (see section 13).

- 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).

**Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.**

**Examination of lung function should be carried out on a regular basis on persons spraying this mixture.**

### 7.1 Precautions for safe handling

Prevent the creation of flammable or explosive concentrations of vapours in air and avoid vapour concentrations higher than the occupational exposure limits.

In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard.

Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Operators should wear antistatic footwear and clothing and floors should be of the conducting type.

Care should be taken when re-opening partly-used containers. Precautions should be taken to minimise exposure to atmospheric humidity or water. CO<sub>2</sub> will be formed, which, in closed containers, could result in pressurisation. Keep away from heat, sparks and flame. No sparking tools should be used.

Avoid contact with skin and eyes. Avoid the inhalation of dust, particulates, spray or mist arising from the application of this mixture. Avoid inhalation of dust from sanding.

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Put on appropriate personal protective equipment (see Section 8).

Never use pressure to empty. Container is not a pressure vessel.

Always keep in containers made from the same material as the original one.

Comply with the health and safety at work laws.

Do not allow to enter drains or watercourses.

**Information on fire and explosion protection**

Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.

### 7.2 Conditions for safe storage, including any incompatibilities

SECTION 7: Handling and storage

Store in accordance with local regulations.

**Notes on joint storage**

Keep away from: oxidising agents, strong alkalis, strong acids.

**Additional information on storage conditions**

Observe label precautions. Store in a dry, cool and well-ventilated area. Keep away from heat and direct sunlight. Keep container tightly closed.

Keep away from sources of ignition. No smoking. Prevent unauthorised access. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Seveso Directive - Reporting thresholds

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
P5c	5000 tonne	50000 tonne

7.3 Specific end use(s)

**Recommendations** : Not available.

**Industrial sector specific solutions** : Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Hexamethylene diisocyanate, oligomers	<b>EH40/2005 WELs (United Kingdom (UK), 1/2020) [isocyanates, all, except methyl isocyanate]</b> Inhalation sensitiser. STEL 15 minutes: 0.07 mg/m³ (as -NCO). TWA 8 hours: 0.02 mg/m³ (as -NCO).
n-butyl acetate	<b>EH40/2005 WELs (United Kingdom (UK), 1/2020)</b> STEL 15 minutes: 966 mg/m³. STEL 15 minutes: 200 ppm. TWA 8 hours: 724 mg/m³. TWA 8 hours: 150 ppm.
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers	<b>EH40/2005 WELs (United Kingdom (UK), 1/2020) [isocyanates, all, except methyl isocyanate]</b> Inhalation sensitiser. STEL 15 minutes: 0.07 mg/m³ (as -NCO). TWA 8 hours: 0.02 mg/m³ (as -NCO).
hexamethylene-di-isocyanate	<b>EH40/2005 WELs (United Kingdom (UK), 1/2020) [isocyanates, all, except methyl isocyanate]</b> Inhalation sensitiser. STEL 15 minutes: 0.07 mg/m³ (as -NCO). TWA 8 hours: 0.02 mg/m³ (as -NCO).

Biological exposure indices

No exposure indices known.

**Recommended monitoring procedures** : Reference should be made to monitoring standards, such as the following: British Standard BS EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) British Standard BS EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) British Standard BS 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

SECTION 8: Exposure controls/personal protection

Product/ingredient name	Type	Exposure	Value	Population	Effects
Hexamethylene diisocyanate, oligomers	DNEL	Long term Inhalation	0.5 mg/m³	Workers	Local
	DNEL	Short term Inhalation	1 mg/m³	Workers	Local
n-butyl acetate	DNEL	Short term Dermal	11 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Oral	2 mg/kg bw/day	General population	Systemic
	DNEL	Short term Oral	2 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	3.4 mg/kg bw/day	General population	Systemic
	DNEL	Short term Dermal	6 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	7 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Dermal	11 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	12 mg/m³	General population	Systemic
	DNEL	Long term Inhalation	35.7 mg/m³	General population	Local
	DNEL	Long term Inhalation	48 mg/m³	Workers	Systemic
	DNEL	Short term Inhalation	300 mg/m³	General population	Local
	DNEL	Short term Inhalation	300 mg/m³	General population	Systemic
	DNEL	Long term Inhalation	300 mg/m³	Workers	Local
	DNEL	Short term Inhalation	600 mg/m³	Workers	Local
	DNEL	Short term Inhalation	600 mg/m³	Workers	Systemic
Reaction mass of ethylbenzene and xylene	DNEL	Long term Dermal	212 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	221 mg/m³	Workers	Systemic
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers	DNEL	Long term Inhalation	0.29 mg/m³	Workers	Local
	DNEL	Short term Inhalation	0.58 mg/m³	Workers	Local
Hydrocarbons, C9, aromatics	DNEL	Long term Inhalation	150 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	25 mg/kg bw/day	Workers	Systemic
hexamethylene-di-isocyanate	DNEL	Long term Inhalation	0.035 mg/m³	Workers	Local
	DNEL	Short term Inhalation	0.07 mg/m³	Workers	Local

PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
Hexamethylene diisocyanate, oligomers	Marine water	12.7 µg/l	-
	Fresh water	1270 µg/l	-
	Sediment	266700 mg/kg	-
	Soil	53200 mg/kg	-
	Sewage Treatment Plant	38.28 mg/kg	-
	Soil	0.09 mg/kg	-
n-butyl acetate	Soil	0.09 mg/kg	-
	Fresh water	0.18 mg/l	-

**SECTION 8: Exposure controls/personal protection**

Reaction mass of ethylbenzene and xylene	Sewage Treatment Plant	35.6 mg/l	-
	Marine water	0.018 mg/l	-
	Fresh water sediment	0.981 mg/kg	-
	Marine water sediment	0.098 mg/kg	-
	Fresh water	0.327 mg/l	-
	Marine water	0.327 mg/l	-
	Sewage Treatment Plant	6.58 mg/l	-
	Fresh water sediment	12.46 mg/kg dw	-
	Marine water sediment	12.46 mg/kg dw	-
	Soil	2.31 mg/kg	-
hexamethylene-di-isocyanate	Sewage Treatment Plant	8.42 mg/l	-

**8.2 Exposure controls**

**Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be exposed to any process in which this product is used.**

**Examination of lung function should be carried out on a regular basis on persons spraying this mixture.**

**Appropriate engineering controls** : Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. Air-fed protective respiratory equipment must be worn by the spray operator, even when good ventilation is provided. In other operations, if local exhaust ventilation and good general extraction are not sufficient to maintain concentrations of particulates and solvent vapours below the OEL, suitable respiratory protection must be worn. (See Occupational exposure controls.)

**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** : Use safety eyewear designed to protect against splash of liquids.

**Skin protection****Hand 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.

**Gloves** : Duration / breakthrough time: <1 hour,  
Glove material: NBR, nitrile rubber, material thickness as splash protection: at least 0.2 mm, (EN374)  
Glove material: NBR, nitrile rubber Material thickness for short-term contact: at least 0.5 mm, (EN374)

The recommendation for the type or types of glove to use when handling this product is based on information from the following source:

Expert judgment

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.



**SECTION 8: Exposure controls/personal protection**

<b>Body protection</b>	: Personnel should wear antistatic clothing made of natural fibres or of high-temperature-resistant synthetic fibres.
<b>Other skin protection</b>	: 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.
<b>Respiratory protection</b>	: By spraying: air-fed respirator. By other operations than spraying, in well ventilated areas, air-fed respirators could be replaced by a combination charcoal filter and particulate filter mask.  Under cool, dry conditions, it is possible for the isocyanate to remain unreacted in the paint film for up to 30 hours after application. If dry flatting is unavoidable, air-fed respiratory protective equipment should be used.
<b>Environmental exposure controls</b>	: Do not allow to enter drains or watercourses.

**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****Appearance**

<b>Physical state</b>	: Liquid.
<b>Colour</b>	: Clear.
<b>Odour</b>	: Not available.
<b>Odour threshold</b>	: Not available.
<b>Melting point/freezing point</b>	: Technically not possible to measure
<b>Initial boiling point and boiling range</b>	: 125 to 203°C (257 to 397.4°F)
<b>Flammability (solid, gas)</b>	: Not available.
<b>Upper/lower flammability or explosive limits</b>	: Lower: 1% Upper: 7.5%
<b>Lower and upper explosive (flammable) limits</b>	: Not available.
<b>Flash point</b>	: Closed cup: 25°C (77°F)
<b>Auto-ignition temperature</b>	: 280°C (536°F)
<b>Decomposition temperature</b>	: Not applicable.
<b>pH</b>	: Not applicable.
<b>Viscosity</b>	: Dynamic (room temperature): 124 mPa·s Kinematic (room temperature): 117 mm²/s Kinematic (40°C): >20.5 mm²/s
<b>Solubility in water</b>	: Not available.
<b>Miscible with water</b>	: No.
<b>Partition coefficient: n-octanol/ water</b>	: Not applicable.
<b>Vapour pressure</b>	: 0.36 kPa (2.7 mm Hg)
<b>Relative density</b>	: Not available.
<b>Density</b>	: 1.058 g/cm³
<b>Vapour density</b>	: Not available.
<b>Explosive properties</b>	: Not available.
<b>Oxidising properties</b>	: Not available.
<b>Weight volatiles</b>	: 29.5 % (w/w)
<b>VOC content</b>	: 29.5 % (w/w) (2010/75/EU)

**SECTION 9: Physical and chemical properties****9.2 Other information****9.2.1 Information with regard to physical hazard classes****Flow time (ISO 2431)** : 87 s (room temperature) [Jet diameter: 4 mm]

Further information Not available.

**9.2.2 Other safety characteristics****Miscible with water** : No.

Further information Not available.

*room temperature (=20°C)***SECTION 10: Stability and reactivity****10.1 Reactivity** : The product reacts slowly with water, resulting in the production of carbon dioxide.**10.2 Chemical stability** : Stable under recommended storage and handling conditions (see Section 7).**10.3 Possibility of hazardous reactions** : In closed containers, pressure build-up could result in distortion, expansion and, in extreme cases, bursting of the container.**10.4 Conditions to avoid** : In a fire, hazardous decomposition products may be produced.**10.5 Incompatible materials** : Keep away from: oxidising agents, strong alkalis, strong acids, amines, alcohols, water. Uncontrolled exothermic reactions occur with amines and alcohols.**10.6 Hazardous decomposition products** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen, hydrogen cyanide, monomeric isocyanates.

Not applicable

**SECTION 11: Toxicological information****11.1 Information on toxicological effects**

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitisation of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitised persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability. Repeated or prolonged contact with irritants may cause dermatitis.

Contains Hexamethylene diisocyanate, oligomers, 3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers, hexamethylene-di-isocyanate. May produce an allergic reaction.

**Acute toxicity**

**SECTION 11: Toxicological information**

Product/ingredient name	Result	Species	Dose	Exposure
Hexamethylene diisocyanate, oligomers	LC50 Inhalation Dusts and mists	Rat	18500 mg/m <sup>3</sup>	1 hours
n-butyl acetate	LC50 Inhalation Vapour	Rat	21.1 mg/l	4 hours
	LD50 Dermal	Rabbit	>17600 mg/kg	-
	LD50 Oral	Rat	10768 mg/kg	-
Reaction mass of ethylbenzene and xylene	LC50 Inhalation Vapour	Rat	6350 to 6700 ppm	4 hours
	LD50 Dermal	Rabbit	121236 mg/kg	-
	LD50 Oral	Rat	3523 to 4000 mg/kg	-
Hydrocarbons, C9, aromatics	LD50 Dermal	Rabbit	>3160 mg/kg	-
	LD50 Oral	Rat - Female	3492 mg/kg	-
hexamethylene diisocyanate	LC50 Inhalation Dusts and mists	Rat	462 mg/m <sup>3</sup>	4 hours
	LC50 Inhalation Vapour	Rat	124 mg/m <sup>3</sup>	4 hours

**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)
mixture	N/A	11022.0	N/A	15.4	2.4
Hexamethylene diisocyanate, oligomers	N/A	N/A	N/A	11	1.5
n-butyl acetate	10768	N/A	N/A	21.1	N/A
Reaction mass of ethylbenzene and xylene	N/A	1100	N/A	11	N/A
Hydrocarbons, C9, aromatics	3492	N/A	N/A	N/A	N/A
hexamethylene-di-isocyanate	500	N/A	N/A	0.124	0.462

**Irritation/Corrosion****Respiratory or skin sensitization**

Product/ingredient name	Route of exposure	Species	Result
-	skin	Mouse	Sensitising

**Mutagenicity****Carcinogenicity****Reproductive toxicity****Teratogenicity****Specific target organ toxicity (single exposure)**

Product/ingredient name	Category	Route of exposure	Target organs
Hexamethylene diisocyanate, oligomers	Category 3	-	Respiratory tract irritation
n-butyl acetate	Category 3	-	Narcotic effects
Reaction mass of ethylbenzene and xylene	Category 3	-	Respiratory tract irritation
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers	Category 3	-	Respiratory tract irritation
Hydrocarbons, C9, aromatics	Category 3	-	Respiratory tract irritation
hexamethylene-di-isocyanate	Category 3	-	Narcotic effects
	Category 3	-	Respiratory tract irritation

**Specific target organ toxicity (repeated exposure)**

SECTION 11: Toxicological information

Product/ingredient name	Category	Route of exposure	Target organs
Reaction mass of ethylbenzene and xylene	Category 2	-	-

Aspiration hazard

Product/ingredient name	Result
Reaction mass of ethylbenzene and xylene Hydrocarbons, C9, aromatics	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

Information on likely routes of exposure : Not available.

Potential acute health effects

- Eye contact : No known significant effects or critical hazards.
- Inhalation : Harmful if inhaled. May cause respiratory irritation.
- Skin contact : 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 : No specific data.
- Inhalation : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- Skin contact : Adverse symptoms may include the following:  
irritation  
redness
- Ingestion : No specific data.

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

Not available.

- 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.
- Mutagenicity : No known significant effects or critical hazards.
- Reproductive toxicity : No known significant effects or critical hazards.

Other information : Not available.

**SECTION 12: Ecological information****12.1 Toxicity**

Product/ingredient name	Result	Species	Exposure
-	Acute EC50 >100 mg/l	Daphnia - <i>Daphnia magna</i>	48 hours
-	Acute LC50 >100 mg/l	Fish - <i>danio rerio</i>	96 hours
-	Acute LC50 185 ppm Marine water	Fish - Inland silverside - <i>Menidia beryllina</i>	96 hours
-	Acute EC50 2.2 mg/l	Algae - Algae - <i>Selenastrum capricornutum</i>	73 hours
-	Acute LC50 1 mg/l	Daphnia - <i>Daphnia magna</i>	24 hours
-	Acute LC50 2.6 mg/l	Fish - Trout - <i>Oncorhynchus mykiss</i>	96 hours
-	Chronic NOEC 16 mg/l	Micro-organism - Activated sludge - <i>Activated sludge</i>	28 days
-	Acute LC50 9.2 mg/l	Fish - Trout - <i>Oncorhynchus mykiss</i>	96 hours

**Conclusion/Summary** : Not available.

**12.2 Persistence and degradability**

Product/ingredient name	Test	Result	Dose	Inoculum
-	-	1 % - Not readily - 28 days	-	Activated sludge

**Conclusion/Summary** : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Hexamethylene diisocyanate, oligomers	-	-	Not readily

**12.3 Bioaccumulative potential**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Hexamethylene diisocyanate, oligomers	5.54	367.7	Low
n-butyl acetate	2.3	-	Low
Reaction mass of ethylbenzene and xylene	3.16	-	Low
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers	14.48	-	High
hexamethylene-di-isocyanate	0.02	57.63	Low

**12.4 Mobility in soil**

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

**Mobility** : Not available.

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

## SECTION 13: Disposal considerations

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

### 13.1 Waste treatment methods

#### Product

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

**Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.





#### 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.

Type of packaging	Waste catalogue
	15 01 10* packaging containing residues of or contaminated by 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. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	UN1263	UN1263	UN1263	UN1263
14.2 UN proper shipping name	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL
14.3 Transport hazard class(es)	3 	3 	3 	3 
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	No.	Yes.	No.	No.

#### Additional information

**ADR/RID** : **Tunnel code** (D/E)

**ADN** : The product is only regulated as an environmentally hazardous substance when transported in tank vessels.

**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.

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SECTION 14: Transport information

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

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.

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

Seveso Directive  
This product is controlled under the Seveso Directive.  
Danger criteria

Category
P5c

National regulations				
Product/ingredient name	List name	Name on list	Classification	Notes

International regulations  
Chemical Weapon Convention List Schedules I, II & III Chemicals  
Not listed.

Montreal Protocol  
Not listed.

Stockholm Convention on Persistent Organic Pollutants  
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  
GB CLP = UK CLP (EC No 1272/2008) on the Classification, Labelling and Packaging of Substances and Mixtures as amended by (EU Exit) Regulations 2019 No. 720 and amendments  
DMEL = Derived Minimal Effect Level  
DNEL = Derived No Effect Level  
EUH statement = GB 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

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**SECTION 16: Other information****Procedure used to derive the classification**

Classification	Justification
Flam. Liq. 3, H226 Acute Tox. 4, H332 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Chronic 3, H412	On basis of test data Calculation method Calculation method Calculation method Calculation method

**Full text of abbreviated H statements**

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

**Full text of classifications**

Acute Tox. 1	ACUTE TOXICITY - Category 1
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
Asp. Tox. 1	ASPIRATION HAZARD - 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 Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1B	SKIN SENSITISATION - Category 1B
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

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**Notice to reader**

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**SECTION 16: Other information**

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