



## HARDENER TOP HS 1:2

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

- 1.1 Product identifier:** HARDENER TOP HS 1:2  
**Other means of identification:**  
**UFI:** FHEH-11X0-X00G-TT1M
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**  
Relevant uses (Professional users): Car repair; hardener for coatings  
For Professional users 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:**  
Troton Sp. z o.o.  
Ząbrowo 14A  
78-120 Gościno - Zachodniopomorskie - Polska  
Phone: +48 94 35 123 94 - Fax: +48 94 35 126 22  
troton@troton.com.pl  
www.troton.pl / www.troton.eu
- 1.4 Emergency telephone number:** ( 8am-4pm)+48 094 35 123 94; 112

### SECTION 2: HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture:**  
**CLP Regulation (EC) No 1272/2008:**  
Classification of this product has been carried out in accordance with CLP Regulation (EC) No 1272/2008.  
Flam. Liq. 3: Flammable liquids, Category 3, H226  
Skin Sens. 1: Sensitisation, skin, Category 1, H317  
STOT SE 3: Specific toxicity causing drowsiness and dizziness, single exposure, Category 3, H336
- 2.2 Label elements:**  
**CLP Regulation (EC) No 1272/2008:**  
**Warning**
-  
- Hazard statements:**  
Flam. Liq. 3: H226 - Flammable liquid and vapour.  
Skin Sens. 1: H317 - May cause an allergic skin reaction.  
STOT SE 3: H336 - May cause drowsiness or dizziness.
- Precautionary statements:**  
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P280: Wear protective gloves/face protection/protective clothing/respiratory protection/protective footwear.  
P302+P352: IF ON SKIN: Wash with plenty of water.  
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P403+P233: Store in a well-ventilated place. Keep container tightly closed.  
P403+P235: Store in a well-ventilated place. Keep cool.  
P501: Dispose of contents/container in accordance with regulations on hazardous waste or packaging and packaging waste respectively.
- Supplementary information:**  
EUH066: Repeated exposure may cause skin dryness or cracking.  
EUH204: Contains isocyanates. May produce an allergic reaction.
- Substances that contribute to the classification**  
N-butyl acetate; Hexamethylene diisocyanate, oligomers
- Additional Labelling:**  
As from 24 August 2023 adequate training is required before industrial or professional use.
- 2.3 Other hazards:**

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**SECTION 2: HAZARDS IDENTIFICATION (continued)**

Product does not meet PBT/vPvB criteria  
Endocrine-disrupting properties: The product does not meet the criteria.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1 Substance:**





Not relevant

**3.2 Mixture:**

**Chemical description:** Mixture composed of chemical products

**Components:**

In accordance with Annex II of Regulation (EC) No 1907/2006 (point 3), the product contains:

| Identification  | Chemical name/Classification  | Concentration |
|---|---|---------------|
| CAS: 123-86-4<br>EC: 204-658-1<br>Index: 607-025-00-1<br>REACH: 01-2119485493-29-XXXX | <b>N-butyl acetate<sup>(1)</sup></b> ATP CLP00  | 25 - <50 %    |
|   | Regulation 1272/2008 Flam. Liq. 3: H226; STOT SE 3: H336; EUH066 - Warning   |               |
| CAS: 28182-81-2<br>EC: 500-060-2<br>Index: Not relevant<br>REACH: Not relevant        | <b>Hexamethylene diisocyanate, oligomers<sup>(1)</sup></b> Self-classified  | 25 - <50 %    |
|   | Regulation 1272/2008 Skin Sens. 1: H317 - Warning    |               |
| CAS: 112-07-2<br>EC: 203-933-3<br>Index: 607-038-00-2<br>REACH: 01-2119475112-47-XXXX | <b>2-butoxyethyl acetate<sup>(1)</sup></b> ATP CLP00  | 25 - <50 %    |
|   | Regulation 1272/2008 Acute Tox. 4: H312+H332 - Warning   |               |
| CAS: 822-06-0<br>EC: 212-485-8<br>Index: 615-011-00-1<br>REACH: 01-2119457571-37-XXXX | <b>Hexamethylene-di-isocyanate<sup>(1)</sup></b> ATP CLP00  | <1 %          |
|   | Regulation 1272/2008 Acute Tox. 3: H331; Eye Irrit. 2: H319; Resp. Sens. 1: H334; Skin Irrit. 2: H315; Skin Sens. 1: H317; STOT SE 3: H335 - Danger  |               |

<sup>(1)</sup> Substances presenting a health or environmental hazard which meet criteria laid down in Regulation (EU) No. 2020/878

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

**Other information:**

| Identification  | Specific concentration limit  |
|---|---|
| Hexamethylene-di-isocyanate<br>CAS: 822-06-0<br>EC: 212-485-8 | % (w/w) >=0,5: Resp. Sens. 1 - H334<br>% (w/w) >=0,5: Skin Sens. 1 - H317 |

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 |
|---|------------------------|--------------|-------|
| 2-butoxyethyl acetate<br>CAS: 112-07-2<br>EC: 203-933-3       | LD50 oral              | Not relevant |       |
|   | LD50 dermal            | 1580 mg/kg   | Rat   |
|   | LC50 inhalation vapour | 11 mg/L      |       |
| Hexamethylene-di-isocyanate<br>CAS: 822-06-0<br>EC: 212-485-8 | LD50 oral              | Not relevant |       |
|   | LD50 dermal            | Not relevant |       |
|   | LC50 inhalation vapour | 3 mg/L       |       |

**SECTION 4: FIRST AID MEASURES**

**4.1 Description of first aid measures:**

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, 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.

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**SECTION 4: FIRST AID MEASURES (continued)****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:**

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:**

Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

**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:**

Foam extinguisher (AB), Dry Chemical Powder (ABC) Fire Extinguisher, Carbon dioxide extinguisher (BC)

**Unsuitable extinguishing media:**

Water jet

**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. 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. Evacuate the area and keep out those without protection. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Above all prevent the formation of any vapour-air flammable mixtures, through either ventilation or the use of an inert medium. Remove any source of ignition. Eliminate electrostatic charges by interconnecting all the conductive surfaces on which static electricity could form, and also ensuring that all surfaces are connected to the ground.

**For emergency responders:**

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

**6.2 Environmental precautions:**

This product is not classified as hazardous to the environment. Keep product away from drains, surface and ground water.

**6.3 Methods and material for containment and cleaning up:**

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**SECTION 6: ACCIDENTAL RELEASE MEASURES (continued)**

It is recommended:

Prevent the entrance of product in drains, sewers or watercourses. Absorb the spill using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. Collect the product in appropriate containers and manage it according to current legislation.

Spillages in water or sea:

Small spillages:

Contain spillage using barriers or similar equipment. Use suitable absorbents for collection and treat the waste in accordance with current regulations.

Large spillages:

If possible, contain spillage in open water using barriers or similar equipment. If this is not possible, try to control its spread and collect the product with suitable mechanical means. Always consult experts before using dispersants and make sure you have the necessary approvals if they are to be used. Treat the waste according to current regulations.

**6.4 Reference to other sections:**

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. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

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

Transfer in well ventilated areas, preferably through localized extraction. Fully control sources of ignition (mobile phones, sparks,...) and ventilate during cleaning operations. Avoid the existence of dangerous atmospheres inside containers, applying inertization systems where possible. Transfer at a slow speed to avoid the creation of electrostatic charges. Against the possibility of electrostatic charges: ensure a perfect equipotential connection, always use groundings, do not wear work clothes made of acrylic fibres, preferably wearing cotton clothing and conductive footwear. Comply with the essential security requirements for equipment and systems defined in Directive 2014/34/EC (ATEX 100) and with the minimum requirements for protecting the security and health of workers under the selection criteria of Directive 1999/92/EC (ATEX 137). Consult section 10 for 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

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

**7.2 Conditions for safe storage, including any incompatibilities:**

A.- Specific storage requirements

Minimum Temp.: 15 °C

Maximum Temp.: 25 °C

Maximum time: 12 Months

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 monitored in the workplace (European OEL, not country-specific legislation):

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**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)**

Directive (EU) 2000/39, Directive 2004/37/EC, Directive (EU) 2006/15, Directive (EU) 2009/161, Directive (EU) 2017/164, Directive (EU) 2019/1831:

| Identification  | Occupational exposure limits |         |                       |
|---|------------------------------|---------|-----------------------|
|   | IOELV (8h)                   | 50 ppm  | 241 mg/m <sup>3</sup> |
| N-butyl acetate<br>CAS: 123-86-4 EC: 204-658-1                      | IOELV (STEL)                 | 150 ppm | 723 mg/m <sup>3</sup> |
| 2-butoxyethyl acetate <sup>(1)</sup><br>CAS: 112-07-2 EC: 203-933-3 | IOELV (8h)                   | 20 ppm  | 133 mg/m <sup>3</sup> |
|   | IOELV (STEL)                 | 50 ppm  | 333 mg/m <sup>3</sup> |

<sup>(1)</sup> Skin

**DNEL (Workers):**

| Identification  |            | Short exposure        |                        | Long exposure         |                         |
|---|------------|-----------------------|------------------------|-----------------------|-------------------------|
|   |            | Systemic              | Local                  | Systemic              | Local                   |
| N-butyl acetate<br>CAS: 123-86-4<br>EC: 204-658-1             | Oral       | Not relevant          | Not relevant           | Not relevant          | Not relevant            |
|   | Dermal     | 11 mg/kg              | Not relevant           | 11 mg/kg              | Not relevant            |
|   | Inhalation | 600 mg/m <sup>3</sup> | 600 mg/m <sup>3</sup>  | 300 mg/m <sup>3</sup> | 300 mg/m <sup>3</sup>   |
| 2-butoxyethyl acetate<br>CAS: 112-07-2<br>EC: 203-933-3       | Oral       | Not relevant          | Not relevant           | Not relevant          | Not relevant            |
|   | Dermal     | 120 mg/kg             | Not relevant           | 169 mg/kg             | Not relevant            |
|   | Inhalation | Not relevant          | 333 mg/m <sup>3</sup>  | 133 mg/m <sup>3</sup> | Not relevant            |
| Hexamethylene-di-isocyanate<br>CAS: 822-06-0<br>EC: 212-485-8 | Oral       | Not relevant          | Not relevant           | Not relevant          | Not relevant            |
|   | Dermal     | Not relevant          | Not relevant           | Not relevant          | Not relevant            |
|   | Inhalation | Not relevant          | 0,07 mg/m <sup>3</sup> | Not relevant          | 0,035 mg/m <sup>3</sup> |

**DNEL (General population):**

| Identification  |            | Short exposure        |                       | Long exposure          |                        |
|---|------------|-----------------------|-----------------------|------------------------|------------------------|
|   |            | Systemic              | Local                 | Systemic               | Local                  |
| N-butyl acetate<br>CAS: 123-86-4<br>EC: 204-658-1       | Oral       | 2 mg/kg               | Not relevant          | 2 mg/kg                | Not relevant           |
|   | Dermal     | 6 mg/kg               | Not relevant          | 6 mg/kg                | Not relevant           |
|   | Inhalation | 300 mg/m <sup>3</sup> | 300 mg/m <sup>3</sup> | 35,7 mg/m <sup>3</sup> | 35,7 mg/m <sup>3</sup> |
| 2-butoxyethyl acetate<br>CAS: 112-07-2<br>EC: 203-933-3 | Oral       | 36 mg/kg              | Not relevant          | 8,6 mg/kg              | Not relevant           |
|   | Dermal     | 72 mg/kg              | Not relevant          | 102 mg/kg              | Not relevant           |
|   | Inhalation | Not relevant          | 200 mg/m <sup>3</sup> | 80 mg/m <sup>3</sup>   | Not relevant           |

**PNEC:**

| Identification  |              |              |                         |              |
|---|--------------|--------------|-------------------------|--------------|
|   |              |              |                         |              |
| N-butyl acetate<br>CAS: 123-86-4<br>EC: 204-658-1             | STP          | 35,6 mg/L    | Fresh water             | 0,18 mg/L    |
|   | Soil         | 0,09 mg/kg   | Marine water            | 0,018 mg/L   |
|   | Intermittent | 0,36 mg/L    | Sediment (Fresh water)  | 0,981 mg/kg  |
|   | Oral         | Not relevant | Sediment (Marine water) | 0,098 mg/kg  |
| 2-butoxyethyl acetate<br>CAS: 112-07-2<br>EC: 203-933-3       | STP          | 90 mg/L      | Fresh water             | 0,304 mg/L   |
|   | Soil         | 0,415 mg/kg  | Marine water            | 0,03 mg/L    |
|   | Intermittent | 0,56 mg/L    | Sediment (Fresh water)  | 2,03 mg/kg   |
|   | Oral         | 0,06 g/kg    | Sediment (Marine water) | 0,203 mg/kg  |
| Hexamethylene-di-isocyanate<br>CAS: 822-06-0<br>EC: 212-485-8 | STP          | 8,42 mg/L    | Fresh water             | Not relevant |
|   | Soil         | Not relevant | Marine water            | Not relevant |
|   | Intermittent | Not relevant | Sediment (Fresh water)  | Not relevant |
|   | Oral         | Not relevant | Sediment (Marine water) | Not relevant |

**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 <<CE marking>> in accordance with Regulation (EU) 2016/425. 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

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**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)**



| Pictogram   | PPE  | Labelling   | CEN Standard        | Remarks  |
|---|--|---|---------------------|--|
| <br>Mandatory respiratory tract protection | Filter mask for gases and vapours (Filter type: A) |  | EN 405:2002+A1:2010 | 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                                       | Labelling   | CEN Standard  | Remarks  |
|--|---|---|---|--|
| <br>Mandatory hand protection | NON-disposable chemical protective gloves |  | EN ISO 374-1:2016+A1:2018<br>EN 16523-1:2015+A1:2018<br>EN ISO 21420:2020 | The Breakthrough Time indicated by the manufacturer must exceed the period during which the product is being used. Do not use protective creams after the product has come into contact with skin. |

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         | Labelling  | CEN Standard  | Remarks  |
|--|-------------|--|---|--|
| <br>Mandatory face protection | Face shield |  | EN 166:2002<br>UNE-EN ISO 18526-1 al 4:2020<br>UNE-EN ISO 18526-1 al 4:2020<br>EN ISO 4007:2018 | Clean daily and disinfect periodically according to the manufacturer 's instructions. Use if there is a risk of splashing. |

E.- Body protection

| Pictogram   | PPE   | Labelling   | CEN Standard  | Remarks  |
|---|---|---|---|--|
| <br>Mandatory complete body protection | Disposable clothing for protection against chemical risks, with antistatic and fireproof properties |  | EN 1149-1,2,3<br>EN 13034:2005+A1:2009<br>EN ISO 13982-1:2005/A1:2011<br>EN ISO 6529:2013<br>EN ISO 6530:2005<br>EN ISO 13688:2013<br>EN 464:1995 | For professional use only. Clean periodically according to the manufacturer 's instructions. |
| <br>Mandatory foot protection          | Safety footwear for protection against chemical risk, with antistatic and heat resistant properties |  | EN ISO 13287:2020<br>EN ISO 20345:2022<br>EN 13832-1:2019   | Replace boots at any sign of deterioration.  |

F.- Additional emergency measures

It is advised to implement additional emergency equipments in workplaces that are particularly exposed to the product or in situations where risk assessments highlight the necessity of such equipments.

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

**Environmental exposure controls:**

To comply with environmental protection regulations, it is recommended to prevent any spillage of the product and its container. For more detailed information, please refer to subsection 7.1.D.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**9.1 Information on basic physical and chemical properties:**

For complete information see the product datasheet.

**Appearance:**

\*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)**

|  |                       |
|--|-----------------------|
| Physical state at 20 °C:                     | Liquid                |
| Appearance:                                  | Colourless            |
| Colour:                                      | Not relevant *        |
| Odour:                                       | Not relevant *        |
| Odour threshold:                             | Not relevant *        |
| <b>Volatility:</b>                           |                       |
| Boiling point at atmospheric pressure:       | 150 °C                |
| Vapour pressure at 20 °C:                    | 793 Pa                |
| Vapour pressure at 50 °C:                    | 3962,8 Pa (3,96 kPa)  |
| Evaporation rate at 20 °C:                   | Not relevant *        |
| <b>Product description:</b>                  |                       |
| Density at 20 °C:                            | 983 kg/m <sup>3</sup> |
| Relative density at 20 °C:                   | 0,913                 |
| Dynamic viscosity at 20 °C:                  | Not relevant *        |
| Kinematic viscosity at 20 °C:                | Not relevant *        |
| 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 *        |
| <b>Flammability:</b>                         |                       |
| Flash Point:                                 | 45 °C                 |
| Flammability (solid, gas):                   | Not relevant *        |
| Autoignition temperature:                    | 180 °C                |
| Lower flammability limit:                    | Not relevant *        |
| Upper flammability limit:                    | Not relevant *        |
| <b>Particle characteristics:</b>             |                       |
| Median equivalent diameter:                  | Not relevant *        |

**9.2 Other information:**

**Information with regard to physical hazard classes:**

|  |                |
|--|----------------|
| 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.

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**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   | Risk of combustion      | Avoid direct impact | Not applicable |

**10.5 Incompatible materials:**

| Acids              | Water          | Oxidising materials | Combustible materials | Others                        |
|--------------------|----------------|---------------------|-----------------------|-------------------------------|
| Avoid strong acids | Not applicable | Avoid direct impact | Not applicable        | Avoid alkalis or strong bases |

**10.6 Hazardous decomposition products:**

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO<sub>2</sub>), carbon monoxide and other organic compounds.

**SECTION 11: TOXICOLOGICAL INFORMATION**
**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008:**

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, as it does not contain substances classified as hazardous for consumption. For more information see section 3
- Corrosivity/Irritability: 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.

**B- Inhalation (acute effect):**

- Acute toxicity : 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.
- Corrosivity/Irritability: 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.

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

- Contact with the skin: Based on available data, the classification criteria are not met. However, it contains substances classified as hazardous for skin contact. For more information see section 3.
- Contact with the eyes: 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.

**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.
- 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, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

**E- Sensitizing effects:**

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**SECTION 11: TOXICOLOGICAL INFORMATION (continued)**

- Respiratory: Based on available data, the classification criteria are not met. However, it contains substances classified as dangerous 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:**

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.

**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: Repeated exposure may cause skin dryness or cracking

**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  |
|---|------------------------|-----------------|--------|
| N-butyl acetate<br>CAS: 123-86-4<br>EC: 204-658-1                         | LD50 oral              | 12789 mg/kg     | Rat    |
|   | LD50 dermal            | 14112 mg/kg     | Rabbit |
|   | LC50 inhalation vapour | 23,4 mg/L (4 h) | Rat    |
| Hexamethylene diisocyanate, oligomers<br>CAS: 28182-81-2<br>EC: 500-060-2 | LD50 oral              | >2000 mg/kg     |        |
|   | LD50 dermal            | >2000 mg/kg     |        |
|   | LC50 inhalation vapour | >20 mg/L        |        |
| 2-butoxyethyl acetate<br>CAS: 112-07-2<br>EC: 203-933-3                   | LD50 oral              | 2820 mg/kg      | Rat    |
|   | LD50 dermal            | 1580 mg/kg      | Rat    |
|   | LC50 inhalation vapour | 11 mg/L         |        |
| Hexamethylene-di-isocyanate<br>CAS: 822-06-0<br>EC: 212-485-8             | LD50 oral              | >2000 mg/kg     |        |
|   | LD50 dermal            | >2000 mg/kg     |        |
|   | LC50 inhalation vapour | 3 mg/L          |        |

**Acute Toxicity Estimate (ATE mix):**

| ATE mix                |                                      | Ingredient(s) of unknown toxicity |
|------------------------|--------------------------------------|-----------------------------------|
| Oral                   | >2000 mg/kg (Calculation method)     | 0 %                               |
| Dermal                 | 5266,67 mg/kg (Calculation method)   | 0 %                               |
| LC50 inhalation vapour | 36,2 mg/L (4 h) (Calculation method) | 0 %                               |

**11.2 Information on other hazards:**
**Endocrine disrupting properties**

Endocrine-disrupting properties: The product does not meet the criteria.

**Other information**

Not relevant

**SECTION 12: ECOLOGICAL INFORMATION**

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

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.

**12.1 Toxicity:**
**Acute toxicity:**

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**SECTION 12: ECOLOGICAL INFORMATION (continued)**

| Identification  | Concentration |                 | Species                 | Genus      |
|---|---------------|-----------------|-------------------------|------------|
| N-butyl acetate<br>CAS: 123-86-4<br>EC: 204-658-1       | LC50          | Not relevant    |                         |            |
|   | EC50          | Not relevant    |                         |            |
|   | EC50          | 675 mg/L (72 h) | Scenedesmus subspicatus | Algae      |
| 2-butoxyethyl acetate<br>CAS: 112-07-2<br>EC: 203-933-3 | LC50          | 80 mg/L (48 h)  | Leuciscus idus          | Fish       |
|   | EC50          | 37 mg/L (48 h)  | Daphnia magna           | Crustacean |
|   | EC50          | 500 mg/L (72 h) | Scenedesmus subspicatus | Algae      |

**Chronic toxicity:**

| Identification                                 | Concentration |              | Species       | Genus      |
|--|---------------|--------------|---------------|------------|
| N-butyl acetate<br>CAS: 123-86-4 EC: 204-658-1 | NOEC          | Not relevant |               |            |
|  | NOEC          | 23,2 mg/L    | Daphnia magna | Crustacean |

**12.2 Persistence and degradability:**

**Substance-specific information:**

| Identification  | Degradability |              | Biodegradability |              |
|---|---------------|--------------|------------------|--------------|
|   |               |              |                  |              |
| N-butyl acetate<br>CAS: 123-86-4<br>EC: 204-658-1             | BOD5          | Not relevant | Concentration    | Not relevant |
|   | COD           | Not relevant | Period           | 5 days       |
|   | BOD5/COD      | Not relevant | % Biodegradable  | 84 %         |
| 2-butoxyethyl acetate<br>CAS: 112-07-2<br>EC: 203-933-3       | BOD5          | Not relevant | Concentration    | 30 mg/L      |
|   | COD           | Not relevant | Period           | 28 days      |
|   | BOD5/COD      | Not relevant | % Biodegradable  | 77,3 %       |
| Hexamethylene-di-isocyanate<br>CAS: 822-06-0<br>EC: 212-485-8 | BOD5          | Not relevant | Concentration    | 100 mg/L     |
|   | COD           | Not relevant | Period           | 28 days      |
|   | BOD5/COD      | Not relevant | % Biodegradable  | 28 %         |

**12.3 Bioaccumulative potential:**

**Substance-specific information:**

| Identification  | Bioaccumulation potential |      |
|---|---------------------------|------|
| N-butyl acetate<br>CAS: 123-86-4<br>EC: 204-658-1       | BCF                       | 4    |
|   | Pow Log                   | 1.78 |
|   | Potential                 | Low  |
| 2-butoxyethyl acetate<br>CAS: 112-07-2<br>EC: 203-933-3 | BCF                       | 3    |
|   | Pow Log                   | 1.51 |
|   | Potential                 | Low  |

**12.4 Mobility in soil:**

| Identification  | Absorption/desorption |                      | Volatility |                                 |
|---|-----------------------|----------------------|------------|---------------------------------|
|   |                       |                      |            |                                 |
| N-butyl acetate<br>CAS: 123-86-4<br>EC: 204-658-1       | Koc                   | Not relevant         | Henry      | Not relevant                    |
|   | Conclusion            | Not relevant         | Dry soil   | Not relevant                    |
|   | Surface tension       | 2,478E-2 N/m (25 °C) | Moist soil | Not relevant                    |
| 2-butoxyethyl acetate<br>CAS: 112-07-2<br>EC: 203-933-3 | Koc                   | Not relevant         | Henry      | 5,532E-1 Pa·m <sup>3</sup> /mol |
|   | Conclusion            | Not relevant         | Dry soil   | Not relevant                    |
|   | Surface tension       | Not relevant         | Moist soil | Yes                             |

**12.5 Results of PBT and vPvB assessment:**

Product does not meet PBT/vPvB criteria

**12.6 Endocrine disrupting properties:**

Endocrine-disrupting properties: The product does not meet the criteria.

**12.7 Other adverse effects:**

Not described

**SECTION 13: DISPOSAL CONSIDERATIONS**

**13.1 Waste treatment methods:**

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**SECTION 13: DISPOSAL CONSIDERATIONS (continued)**

| Code                   | Description   | Waste class (Regulation (EU) No 1357/2014) |
|------------------------|---|--|
| 15 01 10*<br>08 01 11* | packaging containing residues of or contaminated by hazardous substances<br>waste paint and varnish containing organic solvents or other hazardous substances | Hazardous                                  |

**Type of waste (Regulation (EU) No 1357/2014):**

HP3 Flammable, HP5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity, HP6 Acute Toxicity, HP13 Sensitising

**Waste management (disposal and evaluation):**

Consult the authorized waste service manager on the assessment and disposal operations in accordance with Annex 1 and Annex 2 (Directive 2008/98/EC). As under 15 01 (2014/955/EC) 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 Regulation (EC) No 1907/2006 (REACH) the community or state provisions related to waste management are stated

Community legislation: Directive 2008/98/EC, 2014/955/EU, Regulation (EU) No 1357/2014

**SECTION 14: TRANSPORT INFORMATION**

**Transport of dangerous goods by land:**

With regard to ADR 2023 and RID 2023:



- 14.1 UN number or ID number:** UN1263
- 14.2 UN proper shipping name:** PAINT RELATED MATERIAL
- 14.3 Transport hazard class(es):** 3  
Labels: 3
- 14.4 Packing group:** III
- 14.5 Environmental hazards:** No
- 14.6 Special precautions for user**  
Special regulations: 163, 367, 650  
Tunnel restriction code: D/E  
Physico-Chemical properties: see section 9  
Limited quantities: 5 L
- 14.7 Maritime transport in bulk according to IMO instruments:** Not relevant

**Transport of dangerous goods by sea:**

With regard to IMDG 41-22:



- 14.1 UN number or ID number:** UN1263
- 14.2 UN proper shipping name:** PAINT RELATED MATERIAL
- 14.3 Transport hazard class(es):** 3  
Labels: 3
- 14.4 Packing group:** III
- 14.5 Marine pollutant:** No
- 14.6 Special precautions for user**  
Special regulations: 163, 223, 955, 367  
EmS Codes: F-E, S-E  
Physico-Chemical properties: see section 9  
Limited quantities: 5 L  
Segregation group: Not relevant
- 14.7 Maritime transport in bulk according to IMO instruments:** Not relevant

**Transport of dangerous goods by air:**

With regard to IATA/ICAO 2024:

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**SECTION 14: TRANSPORT INFORMATION (continued)**



- 14.1 UN number or ID number:** UN1263
- 14.2 UN proper shipping name:** PAINT RELATED MATERIAL
- 14.3 Transport hazard class(es):** 3  
Labels: 3
- 14.4 Packing group:** III
- 14.5 Environmental hazards:** No
- 14.6 Special precautions for user**  
Physico-Chemical properties: see section 9
- 14.7 Maritime transport in bulk according to IMO instruments:** Not relevant

**SECTION 15: REGULATORY INFORMATION**

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

- Article 95, REGULATION (EU) No 528/2012: Not relevant
- Candidate substances for authorisation under the Regulation (EC) No 1907/2006 (REACH): Not relevant
- Regulation (EU) 2019/1021 on persistent organic pollutants: Not relevant
- Regulation (EU) No 2024/590, about substances that deplete the ozone layer: Not relevant
- REGULATION (EU) No 649/2012, in relation to the import and export of hazardous chemical products: Not relevant
- Substances included in Annex XIV of REACH ("Authorisation List") and sunset date: Not relevant

**Seveso III:**

| Section | Description       | Lower-tier requirements | Upper-tier requirements |
|---------|-------------------|-------------------------|-------------------------|
| P5c     | FLAMMABLE LIQUIDS | 5000                    | 50000                   |

**Limitations to commercialisation and the use of certain dangerous substances and mixtures (Annex XVII 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 more than 0.1 % of diisocyanates by weight. 1. Shall not be used as substances on their own, as a constituent in other substances or in mixtures for industrial and professional use(s) after 24 August 2023, unless:

(a) the concentration of diisocyanates individually and in combination is less than 0,1 % by weight, or (b) the employer or self-employed ensures that industrial or professional user(s) have successfully completed training on the safe use of diisocyanates prior to the use of the substance(s) or mixture(s).

2. Shall not be placed on the market as substances on their own, as a constituent in other substances or in mixtures for industrial and professional use(s) after 24 February 2022, unless:

(a) the concentration of diisocyanates individually and in combination is less than 0,1 % by weight, or (b) the supplier ensures that the recipient of the substance(s) or mixture(s) is provided with information on the requirements referred to in point (b) of paragraph 1 and the following statement is placed on the packaging, in a manner that is visibly distinct from the rest of the label information: "As from 24 August 2023 adequate training is required before industrial or professional use".

3. For the purpose of this entry "industrial and professional user(s)" means any worker or self-employed worker handling diisocyanates on their own, as a constituent in other substances or in mixtures for industrial and professional use(s) or supervising these tasks.

4. The training referred to in point (b) of paragraph 1 shall include the instructions for the control of dermal and inhalation exposure to diisocyanates at the workplace without prejudice to any national occupational exposure limit value or other appropriate risk management measures at national level. Such training shall be conducted by an expert on occupational safety and health with competence acquired by relevant vocational training. That training shall cover as a minimum:

(a) the training elements in point (a) of paragraph 5 for all industrial and professional use(s).

(b) the training elements in points (a) and (b) of paragraph 5 for the following uses:

- handling open mixtures at ambient temperature (including foam tunnels)
- spraying in a ventilated booth
- application by roller
- application by brush
- application by dipping and pouring
- mechanical post treatment (e.g. cutting) of not fully cured articles which are not warm anymore
- cleaning and waste
- any other uses with similar exposure through the dermal and/or inhalation route

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**SECTION 15: REGULATORY INFORMATION (continued)**

(c) the training elements in points (a), (b) and (c) of paragraph 5 for the following uses:

- handling incompletely cured articles (e.g. freshly cured, still warm)
- foundry applications
- maintenance and repair that needs access to equipment
- open handling of warm or hot formulations (> 45 °C)
- spraying in open air, with limited or only natural ventilation (includes large industry working halls) and spraying with high energy (e.g. foams, elastomers)
- and any other uses with similar exposure through the dermal and/or inhalation route.

5. Training elements:

(a) general training, including on-line training, on:

- chemistry of diisocyanates
- toxicity hazards (including acute toxicity)
- exposure to diisocyanates
- occupational exposure limit values
- how sensitisation can develop
- odour as indication of hazard
- importance of volatility for risk
- viscosity, temperature, and molecular weight of diisocyanates
- personal hygiene
- personal protective equipment needed, including practical instructions for its correct use and its limitations
- risk of dermal contact and inhalation exposure
- risk in relation to application process used
- skin and inhalation protection scheme
- ventilation
- cleaning, leakages, maintenance
- discarding empty packaging
- protection of bystanders
- identification of critical handling stages
- specific national code systems (if applicable)
- behaviour-based safety
- certification or documented proof that training has been successfully completed

(b) intermediate level training, including on-line training, on:

- additional behaviour-based aspects
- maintenance
- management of change
- evaluation of existing safety instructions
- risk in relation to application process used
- certification or documented proof that training has been successfully completed

(c) advanced training, including on-line training, on:

- any additional certification needed for the specific uses covered
- spraying outside a spraying booth
- open handling of hot or warm formulations (> 45 °C)
- certification or documented proof that training has been successfully completed

6. The training shall comply with the provisions set by the Member State in which the industrial or professional user(s) operate. Member States may implement or continue to apply their own national requirements for the use of the substance(s) or mixture(s), as long as the minimum requirements set out in paragraphs 4 and 5 are met.

7. The supplier referred to in point (b) of paragraph 2 shall ensure that the recipient is provided with training material and courses pursuant to paragraphs 4 and 5 in the official language(s) of the Member State(s) where the substance(s) or mixture(s) are supplied. The training shall take into consideration the specificity of the products supplied, including composition, packaging, and design.

8. The employer or self-employed shall document the successful completion of the training referred to in paragraphs 4 and 5. The training shall be renewed at least every five years.

9. Member States shall include in their reports pursuant to Article 117(1) the following information:

- (a) any established training requirements and other risk management measures related to the industrial and professional uses of diisocyanates foreseen in national law
- (b) the number of cases of reported and recognised occupational asthma and occupational respiratory and dermal diseases in relation to diisocyanates
- (c) national exposure limits for diisocyanates, if there are any
- (d) information about enforcement activities related to this restriction.

10. This restriction shall apply without prejudice to other Union legislation on the protection of safety and health of workers at the workplace.

**Specific provisions in terms of protecting people or the environment:**

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**SECTION 15: REGULATORY INFORMATION (continued)**

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 product could be affected by sectorial legislation

**15.2 Chemical safety assessment:**

The supplier has not carried out evaluation of chemical safety.

**SECTION 16: OTHER INFORMATION****Legislation related to safety data sheets:**

The SDS shall be supplied in an official language of the country where the product is placed on the market. This safety data sheet has been designed in accordance with ANNEX II-Guide to the compilation of safety data sheets of Regulation (EC) No 1907/2006 (COMMISSION REGULATION (EU) 2020/878).

**Modifications related to the previous Safety Data Sheet which concerns the ways of managing risks.:**

Not relevant

**Texts of the legislative phrases mentioned in section 2:**

H336: May cause drowsiness or dizziness.

H317: May cause an allergic skin reaction.

H226: Flammable liquid and vapour.

**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

**CLP Regulation (EC) No 1272/2008:**

Acute Tox. 3: H331 - Toxic if inhaled.

Acute Tox. 4: H312+H332 - Harmful in contact with skin or if inhaled.

Eye Irrit. 2: H319 - Causes serious eye irritation.

Flam. Liq. 3: H226 - Flammable liquid and vapour.

Resp. Sens. 1: H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin Irrit. 2: H315 - Causes skin irritation.

Skin Sens. 1: H317 - May cause an allergic skin reaction.

STOT SE 3: H335 - May cause respiratory irritation.

STOT SE 3: H336 - May cause drowsiness or dizziness.

**Classification procedure:**

STOT SE 3: Calculation method

Skin Sens. 1: Calculation method

Flam. Liq. 3: Calculation method (2.6.4.3)

**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

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The information contained in this safety data sheet is based on sources, technical knowledge and current legislation at European and state level, 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 -