


**E-245**  
**Solvent based Hardeners**

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

- 1.1 Product identifier:** E-245  
Solvent based Hardeners
- Other means of identification:**  
Non-applicable
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**  
Relevant uses: Hardener for coatings. For industrial user only.  
Uses advised against: All uses not specified in this section or in section 7.3
- 1.3 Details of the supplier of the safety data sheet:**  
BERNARDO ECENARRO, S.A.  
Ugarte Industrialdea, 147  
20720 Azkoitia - Gipuzkoa - Spain  
Phone: +34 943 74 28 00 - Fax: +34 943 74 06 03  
msds@besa.es  
<http://www.besa.es>
- 1.4 Emergency telephone number:** +34 943742800 (8:00-13:00) (14:30-17:30)

**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.  
Acute Tox. 4: Acute inhalation toxicity, Category 4, H332  
Aquatic Chronic 3: Hazardous to the aquatic environment, long-term hazard, Category 3, H412  
Flam. Liq. 3: Flammable liquids, Category 3, H226  
Skin Sens. 1: Sensitisation, skin, Category 1, H317  
STOT SE 3: Respiratory tract toxicity, single exposure, Category 3, H335
- 2.2 Label elements:**  
**CLP Regulation (EC) No 1272/2008:**  
**Warning**
- 
- Hazard statements:**  
Acute Tox. 4: H332 - Harmful if inhaled.  
Aquatic Chronic 3: H412 - Harmful to aquatic life with long lasting effects.  
Flam. Liq. 3: H226 - Flammable liquid and vapour.  
Skin Sens. 1: H317 - May cause an allergic skin reaction.  
STOT SE 3: H335 - May cause respiratory irritation.
- Precautionary statements:**  
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P280: Wear protective gloves/protective clothing/respiratory protection/eye 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.  
P370+P378: In case of fire: Use ABC powder extinguisher to extinguish.  
P501: Dispose of the contents/containers in accordance with the current legislation on waste treatment
- Supplementary information:**  
EUH204: Contains isocyanates. May produce an allergic reaction.
- Substances that contribute to the classification**  
Hexamethylene diisocyanate, oligomers (<0.1 % O=C=N-R-N=C=O); heptan-2-one; 2-butoxyethyl acetate
- 2.3 Other hazards:**  
Product fails to meet PBT/vPvB criteria  
Endocrine-disrupting properties: The product fails to meet the criteria.

\*\* Changes with regards to the previous version

- CONTINUED ON NEXT PAGE -

**E-245**  
**Solvent based Hardeners**

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

**3.1 Substance:**






Non-applicable

**3.2 Mixture:**

**Chemical description:** Mixture composed of additives and resins in solvents

**Components:**

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

Identification	Chemical name/Classification	Concentration
CAS: 28182-81-2 EC: 931-274-8 Index: Non-applicable REACH: 01-2119485796-17-XXXX	<b>Hexamethylene diisocyanate, oligomers (&lt;0.1 % O=C=N-R-N=C=O)</b> <sup>1</sup> Regulation 1272/2008 Acute Tox. 4: H332; Skin Sens. 1: H317; STOT SE 3: H335 - Warning	Self-classified  <b>50 - &lt;100 %</b>
CAS: 110-43-0 EC: 203-767-1 Index: 606-024-00-3 REACH: 01-2119902391-49-XXXX	<b>heptan-2-one</b> <sup>1</sup> Regulation 1272/2008 Acute Tox. 4: H302+H332; Flam. Liq. 3: H226 - Warning	ATP CLP00  <b>10 - &lt;25 %</b>
CAS: 112-07-2 EC: 203-933-3 Index: 607-038-00-2 REACH: 01-2119475112-47-XXXX	<b>2-butoxyethyl acetate</b> <sup>1</sup> Regulation 1272/2008 Acute Tox. 4: H312+H332 - Warning	ATP CLP00  <b>10 - &lt;25 %</b>
CAS: 123-86-4 EC: 204-658-1 Index: 607-025-00-1 REACH: 01-2119485493-29-XXXX	<b>N-butyl acetate</b> <sup>2</sup> Regulation 1272/2008 Flam. Liq. 3: H226; STOT SE 3: H336; EUH066 - Warning	ATP CLP00  <b>5 - &lt;10 %</b>
CAS: 64742-95-6 EC: 265-199-0 Index: 649-356-00-4 REACH: 01-2119486773-24-XXXX	<b>Solvent naphtha (petroleum), light arom., &lt; 0.1 % EC 200-753-7</b> <sup>1</sup> Regulation 1272/2008 Aquatic Chronic 2: H411; Asp. Tox. 1: H304; Flam. Liq. 3: H226; Skin Irrit. 2: H315; STOT SE 3: H336; EUH066 - Danger	ATP ATP01  <b>2,5 - &lt;5 %</b>

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

<sup>2</sup> Voluntarily-listed substance failing to meet any of the criteria set out in Regulation (EU) No. 2020/878

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

\*\* Changes with regards to the previous version

**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.

**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 water for at least 15 minutes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, in which case removal could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS for 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.

- CONTINUED ON NEXT PAGE -

**E-245**  
**Solvent based Hardeners**

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

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

Non-applicable

**SECTION 5: FIREFIGHTING MEASURES**

**5.1 Extinguishing media:**

**Suitable extinguishing media:**

If possible use polyvalent powder fire extinguishers (ABC powder), alternatively use foam or carbon dioxide extinguishers (CO<sub>2</sub>).

**Unsuitable extinguishing media:**

IT IS RECOMMENDED NOT to use full jet water as an extinguishing agent.

**5.2 Special hazards arising from the substance or mixture:**

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

**5.3 Advice for firefighters:**

Depending on the magnitude of the fire it may be necessary to use full protective clothing and self-contained breathing apparatus (SCBA). Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...) in accordance with Directive 89/654/EC.

**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:**

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

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

It is recommended:

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

**6.4 Reference to other sections:**

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.

- CONTINUED ON NEXT PAGE -

**E-245**  
**Solvent based Hardeners**

**SECTION 7: HANDLING AND STORAGE (continued)**

**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**

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

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

**A.- Technical measures for storage**

Minimum Temp.: 5 °C  
Maximum Temp.: 30 °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):

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		
N-butyl acetate CAS: 123-86-4 EC: 204-658-1	IOELV (8h)	50 ppm	241 mg/m <sup>3</sup>	
	IOELV (STEL)	150 ppm	723 mg/m <sup>3</sup>	
heptan-2-one CAS: 110-43-0 EC: 203-767-1	IOELV (8h)	50 ppm	238 mg/m <sup>3</sup>	
	IOELV (STEL)	100 ppm	475 mg/m <sup>3</sup>	
2-butoxyethyl acetate 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>	

**DNEL (Workers):**

Identification			Short exposure		Long exposure	
			Systemic	Local	Systemic	Local
Hexamethylene diisocyanate, oligomers (<0.1 % O=C=N-R-N=C=O) CAS: 28182-81-2 EC: 931-274-8	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable	
	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable	
	Inhalation	Non-applicable	1 mg/m <sup>3</sup>	Non-applicable	0,5 mg/m <sup>3</sup>	
heptan-2-one CAS: 110-43-0 EC: 203-767-1	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable	
	Dermal	Non-applicable	Non-applicable	54,27 mg/kg	Non-applicable	
	Inhalation	1516 mg/m <sup>3</sup>	Non-applicable	394,25 mg/m <sup>3</sup>	Non-applicable	
2-butoxyethyl acetate CAS: 112-07-2 EC: 203-933-3	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable	
	Dermal	120 mg/kg	Non-applicable	169 mg/kg	Non-applicable	
	Inhalation	Non-applicable	333 mg/m <sup>3</sup>	133 mg/m <sup>3</sup>	Non-applicable	

- CONTINUED ON NEXT PAGE -

**E-245**  
**Solvent based Hardeners**

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

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
N-butyl acetate CAS: 123-86-4 EC: 204-658-1	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	11 mg/kg	Non-applicable	11 mg/kg	Non-applicable
	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>
Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7 CAS: 64742-95-6 EC: 265-199-0	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Inhalation	1286,4 mg/m <sup>3</sup>	1066,67 mg/m <sup>3</sup>	Non-applicable	837,5 mg/m <sup>3</sup>

**DNEL (General population):**

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
heptan-2-one CAS: 110-43-0 EC: 203-767-1	Oral	Non-applicable	Non-applicable	23,32 mg/kg	Non-applicable
	Dermal	Non-applicable	Non-applicable	23,32 mg/kg	Non-applicable
	Inhalation	Non-applicable	Non-applicable	84,31 mg/m <sup>3</sup>	Non-applicable
2-butoxyethyl acetate CAS: 112-07-2 EC: 203-933-3	Oral	36 mg/kg	Non-applicable	8,6 mg/kg	Non-applicable
	Dermal	72 mg/kg	Non-applicable	102 mg/kg	Non-applicable
	Inhalation	Non-applicable	200 mg/m <sup>3</sup>	80 mg/m <sup>3</sup>	Non-applicable
N-butyl acetate CAS: 123-86-4 EC: 204-658-1	Oral	2 mg/kg	Non-applicable	2 mg/kg	Non-applicable
	Dermal	6 mg/kg	Non-applicable	6 mg/kg	Non-applicable
	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>
Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7 CAS: 64742-95-6 EC: 265-199-0	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Inhalation	1152 mg/m <sup>3</sup>	640 mg/m <sup>3</sup>	Non-applicable	178,57 mg/m <sup>3</sup>

**PNEC:**

Identification				
Hexamethylene diisocyanate, oligomers (<0.1 % O=C=N-R-N=C=O) CAS: 28182-81-2 EC: 931-274-8	STP	88 mg/L	Fresh water	0,127 mg/L
	Soil	53183 mg/kg	Marine water	0,013 mg/L
	Intermittent	1,27 mg/L	Sediment (Fresh water)	266701 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	26670 mg/kg
heptan-2-one CAS: 110-43-0 EC: 203-767-1	STP	12,5 mg/L	Fresh water	0,098 mg/L
	Soil	0,321 mg/kg	Marine water	0,01 mg/L
	Intermittent	0,982 mg/L	Sediment (Fresh water)	1,89 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	0,189 mg/kg
2-butoxyethyl acetate CAS: 112-07-2 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
N-butyl acetate CAS: 123-86-4 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	Non-applicable	Sediment (Marine water)	0,098 mg/kg

**8.2 Exposure controls:**

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



As a preventative measure it is recommended to use basic Personal Protective Equipment, with the corresponding <<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**



- CONTINUED ON NEXT PAGE -

**E-245**  
**Solvent based Hardeners**

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



Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory respiratory tract protection	Filter mask for gases, vapours and particles		EN 149:2001+A1:2009 EN 405:2002+A1:2010 EN ISO 136:1998	Replace when an increase in resistance to breathing is observed and/or a smell or taste of the contaminant is detected.

**C.- Specific protection for the hands**





Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory hand protection	Protective gloves against minor risks			Replace gloves in case of any sign of damage. For prolonged periods of exposure to the product for professional users/industrials, we recommend using CE III gloves in line with standards EN 420:2004+A1:2010 and EN ISO 374-1:2016+A1:2018

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
 Mandatory face protection	Panoramic glasses against splash/projections.		EN 166:2002 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
 Mandatory complete body protection	Antistatic and fireproof protective clothing		EN 1149-1:2006 EN 1149-2:1997 EN 1149-3:2004 EN 168:2002 EN ISO 14116:2015 EN 1149-5:2018	Limited protection against flames.
 Mandatory foot protection	Safety footwear with antistatic and heat resistant properties		EN ISO 13287:2020 EN ISO 20345:2011	Replace boots at any sign of deterioration.

**F.- Additional emergency measures**

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

**Environmental exposure controls:**

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

**Volatile organic compounds:**

With regard to Directive 2010/75/EU, this product has the following characteristics:

V.O.C. (Supply):	36,94 % weight
V.O.C. density at 20 °C:	384,14 kg/m <sup>3</sup> (384,14 g/L)
Average carbon number:	7,37
Average molecular weight:	130,64 g/mol

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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

- CONTINUED ON NEXT PAGE -

**E-245**  
**Solvent based Hardeners**

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)**

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

For complete information see the product datasheet.

**Appearance:**

Physical state at 20 °C:	Liquid
Appearance:	Fluid
Colour:	Colourless
Odour:	Solvent
Odour threshold:	Non-applicable *

**Volatility:**

Boiling point at atmospheric pressure:	149 °C
Vapour pressure at 20 °C:	442 Pa
Vapour pressure at 50 °C:	2405,13 Pa (2,41 kPa)
Evaporation rate at 20 °C:	Non-applicable *

**Product description:**

Density at 20 °C:	1030 - 1050 kg/m <sup>3</sup>
Relative density at 20 °C:	1,03 - 1,05
Dynamic viscosity at 20 °C:	60 - 40 cP
Kinematic viscosity at 20 °C:	48 mm <sup>2</sup> /s
Kinematic viscosity at 40 °C:	Non-applicable *
Concentration:	Non-applicable *
pH:	Non-applicable *
Vapour density at 20 °C:	Non-applicable *
Partition coefficient n-octanol/water 20 °C:	Non-applicable *
Solubility in water at 20 °C:	Non-applicable *
Solubility properties:	Immiscible
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *

**Flammability:**

Flash Point:	46 °C
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	300 °C
Lower flammability limit:	Not available
Upper flammability limit:	Not available

**Particle characteristics:**

Median equivalent diameter:	Non-applicable
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**9.2 Other information:**

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

Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *
Corrosive to metals:	Non-applicable *
Heat of combustion:	Non-applicable *
Aerosols-total percentage (by mass) of flammable components:	Non-applicable *

**Other safety characteristics:**

Surface tension at 20 °C:	Non-applicable *
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\*Not relevant due to the nature of the product, not providing information property of its hazards.

- CONTINUED ON NEXT PAGE -



**E-245**  
**Solvent based Hardeners**

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)**

Refraction index: Non-applicable \*

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

**SECTION 10: STABILITY AND REACTIVITY**

**10.1 Reactivity:**

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

**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, however, it contains substances classified as dangerous 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 : Exposure in high concentration can interfere with the central nervous system causing headache, dizziness, vertigo, nausea, vomiting, confusion, and in serious cases, loss of consciousness.
- Corrosivity/Irritability: Causes irritation in respiratory passages, which is normally reversible and limited to the upper respiratory passages.

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

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

\*\* Changes with regards to the previous version



**E-245**  
**Solvent based Hardeners**

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

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for the effects mentioned. For more information see section 3.  
IARC: Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7 (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:
- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous with sensitising effects. For more information see section 3.
  - Skin: Prolonged contact with the skin can result in episodes of allergic contact dermatitis.
- F- Specific target organ toxicity (STOT) - single exposure:
- Causes irritation in respiratory passages, which is normally reversible and limited to the upper respiratory passages.
- G- Specific target organ toxicity (STOT)-repeated exposure:
- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
  - Skin: Based on available data, the classification criteria are not met. However, it does contain substances which are classified as dangerous due to repetitive exposure. For more information see section 3.
- H- Aspiration hazard:
- 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.

**Other information:**

Non-applicable

**Specific toxicology information on the substances:**

Identification		Acute toxicity	Genus
N-butyl acetate CAS: 123-86-4 EC: 204-658-1	LD50 oral	12789 mg/kg	Rat
	LD50 dermal	14112 mg/kg	Rabbit
	LC50 inhalation	23,4 mg/L (4 h)	Rat
Hexamethylene diisocyanate, oligomers (<0.1 % O=C=N-R-N=C=O) CAS: 28182-81-2 EC: 931-274-8	LD50 oral	2660 mg/kg	Rat
	LD50 dermal	>2000 mg/kg	
	LC50 inhalation	11 mg/L (ATEi)	
Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7 CAS: 64742-95-6 EC: 265-199-0	LD50 oral	2100 mg/kg	Rat
	LD50 dermal	2000 mg/kg	Rabbit
	LC50 inhalation	>20 mg/L	
heptan-2-one CAS: 110-43-0 EC: 203-767-1	LD50 oral	1600 mg/kg	Rat
	LD50 dermal	>2000 mg/kg	
	LC50 inhalation	11 mg/L (4 h)	Rat
2-butoxyethyl acetate CAS: 112-07-2 EC: 203-933-3	LD50 oral	2100 mg/kg	Rat
	LD50 dermal	1480 mg/kg	Rabbit
	LC50 inhalation	11 mg/L (4 h)	Rat

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

	ATE mix	Ingredient(s) of unknown toxicity
Oral	10666,67 mg/kg (Calculation method)	0 %
Dermal	9807,82 mg/kg (Calculation method)	0 %
Inhalation	12,15 mg/L (4 h) (Calculation method)	0 %

**11.2 Information on other hazards:**

**Endocrine disrupting properties**

Endocrine-disrupting properties: The product fails to meet the criteria.

**Other information**

Non-applicable

\*\* Changes with regards to the previous version

- CONTINUED ON NEXT PAGE -

**E-245**  
**Solvent based Hardeners**

**SECTION 12: ECOLOGICAL INFORMATION \*\***

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

**12.1 Toxicity:**

**Acute toxicity:**

Identification	Concentration	Species	Genus
Hexamethylene diisocyanate, oligomers (<0.1 % O=C=N-R-N=C=O)	LC50 Non-applicable		
CAS: 28182-81-2	EC50 Non-applicable		
EC: 931-274-8	EC50 1000 mg/L (72 h)	Scenedesmus subspicatus	Algae
heptan-2-one	LC50 131 mg/L (96 h)	Pimephales promelas	Fish
CAS: 110-43-0	EC50 Non-applicable		
EC: 203-767-1	EC50 Non-applicable		
2-butoxyethyl acetate	LC50 80 mg/L (48 h)	Leuciscus idus	Fish
CAS: 112-07-2	EC50 37 mg/L (48 h)	Daphnia magna	Crustacean
EC: 203-933-3	EC50 500 mg/L (72 h)	Scenedesmus subspicatus	Algae
N-butyl acetate	LC50 Non-applicable		
CAS: 123-86-4	EC50 Non-applicable		
EC: 204-658-1	EC50 675 mg/L (72 h)	Scenedesmus subspicatus	Algae
Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7	LC50 >1 - 10 mg/L (96 h)		Fish
CAS: 64742-95-6	EC50 >1 - 10 mg/L (48 h)		Crustacean
EC: 265-199-0	EC50 >1 - 10 mg/L (72 h)		Algae

**Chronic toxicity:**

Identification	Concentration	Species	Genus
N-butyl acetate	NOEC Non-applicable		
CAS: 123-86-4 EC: 204-658-1	NOEC 23,2 mg/L	Daphnia magna	Crustacean

**12.2 Persistence and degradability:**

**Substance-specific information:**

Identification	Degradability	Biodegradability
2-butoxyethyl acetate	BOD5 Non-applicable	Concentration 30 mg/L
CAS: 112-07-2	COD Non-applicable	Period 28 days
EC: 203-933-3	BOD5/COD Non-applicable	% Biodegradable 77,3 %
N-butyl acetate	BOD5 Non-applicable	Concentration Non-applicable
CAS: 123-86-4	COD Non-applicable	Period 5 days
EC: 204-658-1	BOD5/COD Non-applicable	% Biodegradable 84 %
Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7	BOD5 0,19 g O2/g	Concentration Non-applicable
CAS: 64742-95-6	COD 0,44 g O2/g	Period Non-applicable
EC: 265-199-0	BOD5/COD 0,43	% Biodegradable Non-applicable

**12.3 Bioaccumulative potential:**

**Substance-specific information:**

Identification	Bioaccumulation potential
heptan-2-one	BCF 7
CAS: 110-43-0	Pow Log 1.98
EC: 203-767-1	Potential Low
2-butoxyethyl acetate	BCF 3
CAS: 112-07-2	Pow Log 1.51
EC: 203-933-3	Potential Low
N-butyl acetate	BCF 4
CAS: 123-86-4	Pow Log 1.78
EC: 204-658-1	Potential Low

\*\* Changes with regards to the previous version

- CONTINUED ON NEXT PAGE -

**E-245**  
**Solvent based Hardeners**

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

Identification	Bioaccumulation potential
Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7	BCF
CAS: 64742-95-6	Pow Log
EC: 265-199-0	Potential
	4

**12.4 Mobility in soil:**

Identification	Absorption/desorption	Volatility
heptan-2-one	Koc	Henry
CAS: 110-43-0	Conclusion	Dry soil
EC: 203-767-1	Surface tension	Moist soil
2-butoxyethyl acetate	Koc	Henry
CAS: 112-07-2	Conclusion	Dry soil
EC: 203-933-3	Surface tension	Moist soil
N-butyl acetate	Koc	Henry
CAS: 123-86-4	Conclusion	Dry soil
EC: 204-658-1	Surface tension	Moist soil

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

Product fails to meet PBT/vPvB criteria

**12.6 Endocrine disrupting properties:**

Endocrine-disrupting properties: The product fails to meet the criteria.

**12.7 Other adverse effects:**

Not described

\*\* Changes with regards to the previous version

**SECTION 13: DISPOSAL CONSIDERATIONS**

**13.1 Waste treatment methods:**

Code	Description	Waste class (Regulation (EU) No 1357/2014)
08 01 11*	waste paint and varnish containing organic solvents or other hazardous substances	Dangerous

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

HP14 Ecotoxic, 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-dangerous 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 2021 and RID 2021:

- CONTINUED ON NEXT PAGE -

**E-245**  
**Solvent based Hardeners**

**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**  
 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:** Non-applicable

**Transport of dangerous goods by sea:**

With regard to IMDG 40-20:



- 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: Non-applicable  
**14.7 Maritime transport in bulk according to IMO instruments:** Non-applicable

**Transport of dangerous goods by air:**

With regard to IATA/ICAO 2022:



- 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:** Non-applicable

**SECTION 15: REGULATORY INFORMATION**

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

Candidate substances for authorisation under the Regulation (EC) No 1907/2006 (REACH): Non-applicable  
 Substances included in Annex XIV of REACH ("Authorisation List") and sunset date: Non-applicable  
 Regulation (EC) No 1005/2009, about substances that deplete the ozone layer: Non-applicable  
 Article 95, REGULATION (EU) No 528/2012: Non-applicable

- CONTINUED ON NEXT PAGE -

**E-245**  
**Solvent based Hardeners**

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

REGULATION (EU) No 649/2012, in relation to the import and export of hazardous chemical products: Non-applicable

**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.

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

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

**Other legislation:**

The 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.:**

COMMISSION REGULATION (EU) 2020/878

COMPOSITION/INFORMATION ON INGREDIENTS (SECTION 3, SECTION 11, SECTION 12):

- New declared substances  
Hexamethylene diisocyanate, oligomers (<0.1 % O=C=N-R-N=C=O) (28182-81-2)
- Removed substances  
Hexamethylene diisocyanate, oligomers (28182-81-2)

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

- H317: May cause an allergic skin reaction.
- H335: May cause respiratory irritation.
- H412: Harmful to aquatic life with long lasting effects.
- H332: Harmful if inhaled.
- 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. 4: H302+H332 - Harmful if swallowed or if inhaled.
- Acute Tox. 4: H312+H332 - Harmful in contact with skin or if inhaled.
- Acute Tox. 4: H332 - Harmful if inhaled.
- Aquatic Chronic 2: H411 - Toxic to aquatic life with long lasting effects.
- Asp. Tox. 1: H304 - May be fatal if swallowed and enters airways.
- Flam. Liq. 3: H226 - Flammable liquid and vapour.
- 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:**

- CONTINUED ON NEXT PAGE -

**E-245**  
**Solvent based Hardeners**

**SECTION 16: OTHER INFORMATION (continued)**

Skin Sens. 1: Calculation method  
STOT SE 3: Calculation method  
Aquatic Chronic 3: Calculation method  
Acute Tox. 4: 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

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 -