

E-245
Solvent based Hardeners

SECTION 1: IDENTIFICATION

- 1.1 GHS Product identifier:** E-245
Solvent based Hardeners
- Other means of identification:**
Non-applicable
- 1.2 Recommended use of the chemical and restrictions on use:**
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 Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:**
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 phone number:** +34 943742800 (8:00-13:00) (14:30-17:30)

SECTION 2: HAZARD(S) IDENTIFICATION

- 2.1 Classification of the substance or mixture:**
29 CFR 1910.1200:
Classification of this product has been carried out in accordance with paragraph (d) of § 1910.1200.
Acute Tox. 4: Acute inhalation toxicity, Category 4, H332
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:**
29 CFR 1910.1200:
Warning
- 

- Hazard statements:**
Acute Tox. 4: H332 - Harmful if inhaled.
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 soap and water.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P370+P378: In case of fire: Use ABC powder extinguisher to put it out.
P501: Dispose of contents and / or containers in accordance with regulations on hazardous waste or packaging and packaging waste respectively.
- 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 Hazards not otherwise classified (HNOC):**
Non-applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

- 3.1 Substances:**
Non-applicable
- 3.2 Mixtures:**

- CONTINUED ON NEXT PAGE -

E-245
Solvent based Hardeners

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

Chemical description: Mixture composed of additives and resins in solvents

Components:

Remaining components are non-hazardous and/or present at amounts below reportable limits. The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200. Therefore, in accordance with Appendix D to § 1910.1200, the product contains:

Identification	Chemical name/Classification	Concentration
CAS: 28182-81-2	Hexamethylene diisocyanate, oligomers (<0.1 % O=C=N-R-N=C=O) Acute Tox. 4: H332; Skin Sens. 1: H317; STOT SE 3: H335 - Warning	 50 - <100 %
CAS: 110-43-0	heptan-2-one Acute Tox. 4: H302+H332; Flam. Liq. 3: H226 - Warning	  10 - <25 %
CAS: 112-07-2	2-butoxyethyl acetate Acute Tox. 4: H312+H332; Flam. Liq. 4: H227 - Warning	 10 - <25 %
CAS: 123-86-4	N-butyl acetate Flam. Liq. 3: H226; STOT SE 3: H336 - Warning	  5 - <10 %
CAS: 64742-95-6	Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7 Asp. Tox. 1: H304; Flam. Liq. 3: H226; Skin Irrit. 2: H315; STOT SE 3: H336 - Danger	   2,5 - <5 %

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

SECTION 4: FIRST-AID MEASURES

4.1 Description of necessary 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:

May cause an allergic skin reaction. In case of contact it is recommended to clean the affected area thoroughly with water and neutral soap. In case of changes on the skin (stinging, redness, rashes, blisters,...), seek medical advice with this Safety Data Sheet

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, as 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/effects, acute and delayed:

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

4.3 Indication of immediate medical attention and special treatment needed, if necessary:

Non-applicable

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable (and unsuitable) extinguishing media:

Suitable extinguishing media:

If possible use polyvalent powder fire extinguishers (ABC powder), alternatively use foam or carbon dioxide extinguishers (CO₂).

Unsuitable extinguishing media:

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

5.2 Specific hazards arising from the chemical:

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.

- CONTINUED ON NEXT PAGE -

E-245
Solvent based Hardeners

SECTION 5: FIRE-FIGHTING MEASURES (continued)

5.3 Special protective equipment and precautions for fire-fighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

Additional provisions:

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Only properly trained personnel should be involved in firefighting. Evacuate nonessential personnel from the fire area. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation. 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:

The characteristic of Ignitability per RCRA could apply to the unused product if it becomes a waste material. The EPA hazardous waste number D001 could apply. It is the responsibility of the waste generator to evaluate whether his wastes are hazardous by characteristics or listing.

6.3 Methods and materials 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 standards 29 CFR 1910 Occupational Safety and Health Standards. 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

Because the product is a flammable liquid, storage should meet the requirement of 29 CFR 1910.106, Flammable and Combustible Liquids Code. 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 and with the minimum requirements for protecting the security and health of workers. 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.- Technical measures for storage

- CONTINUED ON NEXT PAGE -

E-245
Solvent based Hardeners

SECTION 7: HANDLING AND STORAGE (continued)

Minimum Temp.: 41 °F
Maximum Temp.: 86 °F
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:

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000):

Identification		Occupational exposure limits	
N-butyl acetate	8-hour TWA PEL	150 ppm	710 mg/m ³
CAS: 123-86-4	Ceiling Values - TWA PEL		
heptan-2-one	8-hour TWA PEL	100 ppm	465 mg/m ³
CAS: 110-43-0	Ceiling Values - TWA PEL		

US. ACGIH Threshold Limit Values (2022):

Identification		Occupational exposure limits	
N-butyl acetate	TLV-TWA	20 ppm	
CAS: 123-86-4	TLV-STEL		
Hexamethylene-di-isocyanate	TLV-TWA	0.005 ppm	
CAS: 822-06-0	TLV-STEL		
heptan-2-one	TLV-TWA	50 ppm	
CAS: 110-43-0	TLV-STEL		
2-butoxyethyl acetate	TLV-TWA	20 ppm	
CAS: 112-07-2	TLV-STEL		

CALIFORNIA- TABLE AC-1 PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS:

Identification		Occupational exposure limits	
N-butyl acetate	PEL	150 ppm	710 mg/m ³
CAS: 123-86-4	STEL	200 ppm	950 mg/m ³
Hexamethylene-di-isocyanate	PEL	0.005 ppm	0.034 mg/m ³
CAS: 822-06-0	STEL		
heptan-2-one	PEL	50 ppm	235 mg/m ³
CAS: 110-43-0	STEL		

Biological limit values:

Biological Exposure Indices (BEIs®) - ACGIH

Identification	BEIs®	Determinant	Sampling Time
Hexamethylene-di-isocyanate CAS: 822-06-0	0.015 mg/g (NULL)	1,6-Hexamethylene diamine in urine	End of shift

8.2 Appropriate engineering controls:

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

As a preventative measure it is recommended to use basic Personal Protection Equipment. For more information on Personal Protection 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, the information on clothing performance must be combined with professional judgment, and a clear understanding of the clothing application, to provide the best protection to the worker. All chemical protective clothing use must be based on a hazard assessment to determine the risks for exposure to chemicals and other hazards. Conduct hazard assessments in accordance with 29 CFR 1910.132.

B.- Respiratory protection

- CONTINUED ON NEXT PAGE -

E-245
Solvent based Hardeners

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Pictogram	PPE	Remarks
 Mandatory respiratory tract protection	Filter mask for gases, vapours and particles	Replace when an increase in resistance to breathing is observed and/or a smell or taste of the contaminant is detected. Use respirator in accordance with manufacturer's use limitations and OSHA standard 1910.134 (29CFR).

C.- Specific protection for the hands

Pictogram	PPE	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 /industrial users, we recommend using chemical protection gloves. Use gloves in accordance with manufacturer's use limitations and OSHA standard 1910.138 (29CFR)

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

D.- Eye and face protection

Pictogram	PPE	Remarks
 Mandatory face protection	Panoramic glasses against splash/projections.	Clean daily and disinfect periodically according to the manufacturer's instructions. Use if there is a risk of splashing. Use this PPE in accordance with manufacturer's use limitations and OSHA standard 1910.133 (29CFR)

E.- Bodily protection

Pictogram	PPE	Remarks
 Mandatory complete body protection	Antistatic and fireproof protective clothing	Limited protection against flames.
 Mandatory foot protection	Safety footwear with antistatic and heat resistant properties	Replace boots at any sign of deterioration. Use foot protection in accordance with manufacturer's use limitations and OSHA standard 1910.136 (29CFR)

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

40 CFR Part 59 (VOC):

V.O.C.(weight-percent):	36.94 % weight
V.O.C. at 68 °F:	384.14 kg/m ³ (384.14 g/L)

California Air Resources Board (CARB) - VOC Regulatory:

V.O.C.(weight-percent):	36.94 % weight
V.O.C. at 68 °F:	384.14 kg/m ³ (384.14 g/L)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic 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)

For complete information see the product datasheet.

Appearance:

Physical state at 68 °F:	Liquid
Appearance:	Fluid
Color:	Colorless
Odor:	Solvent
Odour threshold:	Non-applicable *

Volatility:

Boiling point at atmospheric pressure:	301 °F
Vapour pressure at 68 °F:	442 Pa
Vapour pressure at 122 °F:	2405.13 Pa (2.41 kPa)
Evaporation rate at 68 °F:	Non-applicable *

Product description:

Density at 68 °F:	1030 - 1050 kg/m ³
Relative density at 68 °F:	1.03 - 1.05
Dynamic viscosity at 68 °F:	60 - 40 cP
Kinematic viscosity at 68 °F:	48 mm ² /s
Kinematic viscosity at 104 °F:	Non-applicable *
Concentration:	Non-applicable *
pH:	Non-applicable *
Vapour density at 68 °F:	Non-applicable *
Partition coefficient n-octanol/water 68 °F:	Non-applicable *
Solubility in water at 68 °F:	Non-applicable *
Solubility properties:	Immiscible
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *

Flammability:

Flash Point:	116 °F
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	572 °F
Lower flammability limit:	Not available
Upper flammability limit:	Not available

Particle characteristics:

Median equivalent diameter:	Non-applicable
-----------------------------	----------------

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 68 °F:	Non-applicable *
Refraction index:	Non-applicable *

*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 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 (CO₂), carbon monoxide and other organic compounds

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

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

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health 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 cause a breakdown in 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):

- 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:

- CONTINUED ON NEXT PAGE -

E-245
Solvent based Hardeners

SECTION 11: TOXICOLOGICAL INFORMATION (continued)

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

H- Aspiration hazard:

Based on available data, the classification criteria are not met. 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	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	LD50 oral	2660 mg/kg	Rat
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	11 mg/L (ATEi)	
Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7 CAS: 64742-95-6	LD50 oral	2100 mg/kg	Rat
	LD50 dermal	2000 mg/kg	Rabbit
	LC50 inhalation	>20 mg/L	
heptan-2-one CAS: 110-43-0	LD50 oral	1600 mg/kg	Rat
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	11 mg/L (4 h)	Rat
2-butoxyethyl acetate CAS: 112-07-2	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 %

SECTION 12: ECOLOGICAL INFORMATION

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

12.1 Ecotoxicity (aquatic and terrestrial, where available):

Acute toxicity:

Identification		Concentration	Species	Genus
Hexamethylene diisocyanate, oligomers (<0.1 % O=C=N-R-N=C=O) CAS: 28182-81-2	LC50	Non-applicable		
	EC50	Non-applicable		
	EC50	1000 mg/L (72 h)	Scenedesmus subspicatus	Algae
heptan-2-one CAS: 110-43-0	LC50	131 mg/L (96 h)	Pimephales promelas	Fish
	EC50	Non-applicable		
	EC50	Non-applicable		
2-butoxyethyl acetate CAS: 112-07-2	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

- CONTINUED ON NEXT PAGE -

E-245
Solvent based Hardeners

SECTION 12: ECOLOGICAL INFORMATION (continued)

Identification		Concentration	Species	Genus
N-butyl acetate CAS: 123-86-4	LC50	Non-applicable		
	EC50	Non-applicable		
	EC50	675 mg/L (72 h)	Scenedesmus subspicatus	Algae

Chronic toxicity:

Identification		Concentration	Species	Genus
N-butyl acetate CAS: 123-86-4	NOEC	Non-applicable		
	NOEC	23.2 mg/L	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Substance-specific information:

Identification		Degradability		Biodegradability	
2-butoxyethyl acetate CAS: 112-07-2	BOD5	Non-applicable	Concentration		30 mg/L
	COD	Non-applicable	Period		28 days
	BOD5/COD	Non-applicable	% Biodegradable		77.3 %
N-butyl acetate CAS: 123-86-4	BOD5	Non-applicable	Concentration		Non-applicable
	COD	Non-applicable	Period		5 days
	BOD5/COD	Non-applicable	% Biodegradable		84 %
Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7 CAS: 64742-95-6	BOD5	0.19 g O2/g	Concentration		Non-applicable
	COD	0.44 g O2/g	Period		Non-applicable
	BOD5/COD	0.43	% Biodegradable		Non-applicable

12.3 Bioaccumulative potential:

Substance-specific information:

Identification		Bioaccumulation potential	
heptan-2-one CAS: 110-43-0	BCF		7
	Pow Log		1.98
	Potential		Low
2-butoxyethyl acetate CAS: 112-07-2	BCF		3
	Pow Log		1.51
	Potential		Low
N-butyl acetate CAS: 123-86-4	BCF		4
	Pow Log		1.78
	Potential		Low
Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7 CAS: 64742-95-6	BCF		
	Pow Log		4
	Potential		

12.4 Mobility in soil:

Identification		Absorption/desorption		Volatility	
heptan-2-one CAS: 110-43-0	Koc	280	Henry		17.12 Pa·m ³ /mol
	Conclusion	Moderate	Dry soil		Yes
	Surface tension	2.612E-2 N/m (77 °F)	Moist soil		Yes
2-butoxyethyl acetate CAS: 112-07-2	Koc	Non-applicable	Henry		5.532E-1 Pa·m ³ /mol
	Conclusion	Non-applicable	Dry soil		No
	Surface tension	Non-applicable	Moist soil		Yes
N-butyl acetate CAS: 123-86-4	Koc	Non-applicable	Henry		Non-applicable
	Conclusion	Non-applicable	Dry soil		Non-applicable
	Surface tension	2.478E-2 N/m (77 °F)	Moist soil		Non-applicable

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

- CONTINUED ON NEXT PAGE -

E-245
Solvent based Hardeners

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations. 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 epigraph 6.2.

Regulations related to waste management:

Legislation related to waste management:

40 CFR Part 261- IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land:

With regard to 49 CFR on the Transport of Dangerous Goods:



- 14.1 UN number:** UN1263
14.2 UN proper shipping name: PAINT RELATED MATERIAL
14.3 Transport hazard class(es): 3
 Labels: 3
14.4 Packing group, if applicable: III
14.5 Marine pollutant: No
14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises
 Physico-Chemical properties: see section 9
 Limited quantities: 5 L
 49 CFR 173.150: A flammable liquid with a flash point at or above 38 °C (100 °F) that does not meet the definition of any other hazard class may be reclassified as a combustible liquid. This provision does not apply to transportation by vessel or aircraft, except where other means of transportation is impracticable. It can be shipped as a non-hazardous material if the container is under 120 gallons.
14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Non-applicable

Transport of dangerous goods by sea:

With regard to IMDG 40-20:



- 14.1 UN number:** UN1263
14.2 UN proper shipping name: PAINT RELATED MATERIAL
14.3 Transport hazard class(es): 3
 Labels: 3
14.4 Packing group, if applicable: III
14.5 Marine pollutant: No
14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises
 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 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Non-applicable

Transport of dangerous goods by air:

With regard to IATA/ICAO 2022:

- CONTINUED ON NEXT PAGE -

E-245
Solvent based Hardeners

SECTION 14: TRANSPORT INFORMATION (continued)



- 14.1 UN number:** UN1263
14.2 UN proper shipping name: PAINT RELATED MATERIAL
14.3 Transport hazard class(es): 3
Labels: 3
14.4 Packing group, if applicable: III
14.5 Marine pollutant: No
14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises
 Physico-Chemical properties: see section 9
14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Non-applicable

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

- CALIFORNIA LABOR CODE - The Hazardous Substances List: *heptan-2-one (110-43-0)*; *N-butyl acetate (123-86-4)*
- California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986) - Birth defects or other reproductive harm: Non-applicable
- California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986) - Cancer: Non-applicable
- CANADA-Domestic Substances List (DSL): *Hexamethylene diisocyanate, oligomers (<0.1 % O=C=N-R-N=C=O) (28182-81-2)*; *heptan-2-one (110-43-0)*; *2-butoxyethyl acetate (112-07-2)*; *N-butyl acetate (123-86-4)*; *Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7 (64742-95-6)*
- CANADA-Non-Domestic Substances List (NDSL): Non-applicable
- Hazardous Air Pollutants (Clean Air Act): *2-butoxyethyl acetate (112-07-2)*
- Massachusetts RTK - Substance List: *Hexamethylene diisocyanate, oligomers (<0.1 % O=C=N-R-N=C=O) (28182-81-2)*; *heptan-2-one (110-43-0)*; *2-butoxyethyl acetate (112-07-2)*; *N-butyl acetate (123-86-4)*; *Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7 (64742-95-6)*
- Minnesota - Hazardous substances ERTK: *heptan-2-one (110-43-0)*; *N-butyl acetate (123-86-4)*; *Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7 (64742-95-6)*
- New Jersey Worker and Community Right-to-Know Act: *heptan-2-one (110-43-0)*; *2-butoxyethyl acetate (112-07-2)*; *N-butyl acetate (123-86-4)*; *Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7 (64742-95-6)*
- New York RTK - Substance list: *heptan-2-one (110-43-0)*; *2-butoxyethyl acetate (112-07-2)*; *N-butyl acetate (123-86-4)*
- NTP (National Toxicology Program): *Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7 (64742-95-6)*
- OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096): Non-applicable
- Pennsylvania Worker and Community Right-to-Know Law: *heptan-2-one (110-43-0)*; *2-butoxyethyl acetate (112-07-2)*; *N-butyl acetate (123-86-4)*; *Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7 (64742-95-6)*
- Rhode Island - Hazardous substances RTK: *2-butoxyethyl acetate (112-07-2)*; *N-butyl acetate (123-86-4)*
- The Toxic Substances Control Act (TSCA) : *Hexamethylene diisocyanate, oligomers (<0.1 % O=C=N-R-N=C=O) (28182-81-2)*; *heptan-2-one (110-43-0)*; *2-butoxyethyl acetate (112-07-2)*; *N-butyl acetate (123-86-4)*; *Solvent naphtha (petroleum), light arom., < 0.1 % EC 200-753-7 (64742-95-6)*
- Toxic chemical release reporting under EPCRA section 313 (40 CFR Part 372): *2-butoxyethyl acetate (112-07-2)*
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantities: *2-butoxyethyl acetate (1 pounds)*; *N-butyl acetate (5000 pounds)*

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation:

Take into consideration other applicable federal, state, and local laws and local regulations.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Appendix d to §1910.1200 - Safety data sheets

Texts of the legislative phrases mentioned in section 2:

- CONTINUED ON NEXT PAGE -

E-245
Solvent based Hardeners

SECTION 16: OTHER INFORMATION (continued)

H317: May cause an allergic skin reaction.

H335: May cause respiratory irritation.

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

29 CFR 1910.1200:

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.

Asp. Tox. 1: H304 - May be fatal if swallowed and enters airways.

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

Flam. Liq. 4: H227 - Combustible liquid.

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.

Advice related to training:

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

Principal bibliographical sources:

Occupational Safety & Health Administration (OSHA).

Abbreviations and acronyms:

IMDG: International maritime dangerous goods code

IATA: International Air Transport Association

ICAO: International Civil Aviation Organisation

COD: Chemical Oxygen Demand

BOD5: 5-day biochemical oxygen demand

BCF: Bioconcentration factor

LD50: Lethal Dose 50

CL50: Lethal Concentration 50

EC50: Effective concentration 50

Log-POW: Octanol-water partition coefficient

Koc: Partition coefficient of organic carbon

IARC: International Agency for Research on Cancer

Date of compilation: 11/1/2012

Revised: 12/7/2022

Manufacturer Disclaimer: The information contained in this safety data sheet ("SDS") is based on sources, technical knowledge and current legislation. Furthermore, is based on data believed to be accurate; thus, the company does not assume any liability for its accuracy. The information provided herein cannot be considered a guarantee of the properties of this product and the same is simply a description of the security requirements. The use, occupational methodology and/or conditions for users of this product are not within our awareness or control. It is ultimately the responsibility of the user(s) to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information of this SDS only refers to this product, which should not be used for purposes other than those specified. Finally, the manner in which this product is used and whether there is any infringement of patents is the sole responsibility of the user(s).

END OF SAFETY DATA SHEET