


SECTION 1: IDENTIFICATION

- 1.1 GHS Product identifier:** 100144 - Hardener PU 144 Premium
Other means of identification:
- 1.2 Recommended use of the chemical and restrictions on use:**
Relevant uses: Hardener for coatings. For professional users/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:**
Valresa Coatings, S.A.
Pol. Ind. Reva S-13 Avda. dels Gremis s/n
46190 Riba-roja de Turia - Valencia - Spain
Phone: +34 961669560 - Fax: +34 961668665
safety@valresa.com
www.valresa.com
- 1.4 Emergency phone number:** +1 772 284 5590 (Only available during office hours)

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.
Eye Irrit. 2A: Eye irritation, Category 2A, H319
Flam. Liq. 2: Flammable liquids, Category 2, H225
Repr. 2: Reproductive toxicity, Category 2, H361
Skin Irrit. 2: Skin irritation, Category 2, H315
Skin Sens. 1: Sensitisation, skin, Category 1, H317
STOT RE 2: Specific target organ toxicity, repeated exposure, Category 2, H373
STOT SE 3: Specific toxicity causing drowsiness and dizziness, single exposure, Category 3, H336
- 2.2 Label elements:**
29 CFR 1910.1200:
Danger
- 
- Hazard statements:**
Causes serious eye irritation.
Highly flammable liquid and vapour.
Suspected of damaging fertility or the unborn child.
Causes skin irritation.
May cause an allergic skin reaction.
May cause damage to organs through prolonged or repeated exposure.
May cause drowsiness or dizziness.
- Precautionary statements:**
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Wear protective gloves/face protection/protective clothing/respiratory protection/protective footwear.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/attention.
In case of fire: Use ABC powder extinguisher to put it out.
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**
N-butyl acetate; Toluene; Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidene-trimethanol; Ethyl acetate
- 2.3 Hazards not otherwise classified (HNOC):**
Not applicable (N/A)

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances:

Non-applicable

3.2 Mixtures:

Chemical description: polyisocyanate

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	Concentration
CAS: 123-86-4	N-butyl acetate	25 - <50 %
CAS: 108-88-3	Toluene	10 - <25 %
CAS: 53317-61-6	Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidene-trimethanol	10 - <25 %
CAS: 141-78-6	Ethyl acetate	10 - <25 %
CAS: 9017-01-0	Toluene diisocyanate homopolymer	10 - <25 %

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:

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, 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:

Not applicable (N/A)

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).

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SECTION 5: FIRE-FIGHTING MEASURES (continued)

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.

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:

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

6.3 Methods and materials for containment and cleaning up:

For accidental releases in excess of reportable quantities (RQ) (Table 302.4), refer to 40 CFR 302 for detailed instructions concerning reporting requirements and notify the National Response Center (800) 424-8802.

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

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SECTION 7: HANDLING AND STORAGE (continued)

PREGNANT WOMEN SHOULD NOT BE EXPOSED TO THIS PRODUCT. Transfer in fixed places that comply with the necessary security conditions (emergency showers and eyewash stations in close proximity), using personal protection equipment, especially on the hands and face (See section 8). Limit manual transfers to containers of small amounts. 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

Minimum Temp.: 41 °F

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		
	8-hour TWA PEL	400 ppm	1400 mg/m ³
Ethyl acetate CAS: 141-78-6	Ceiling Values - TWA PEL		
N-butyl acetate CAS: 123-86-4	8-hour TWA PEL	150 ppm	710 mg/m ³
	Ceiling Values - TWA PEL		
Toluene CAS: 108-88-3	8-hour TWA PEL	200 ppm	300 mg/m ³
	Ceiling Values - TWA PEL		

US. ACGIH Threshold Limit Values (2022):

Identification	Occupational exposure limits		
	TLV-TWA	150 ppm	
Ethyl acetate CAS: 141-78-6	TLV-STEL		
N-butyl acetate CAS: 123-86-4	TLV-TWA	20 ppm	
	TLV-STEL		
Toluene CAS: 108-88-3	TLV-TWA	20 ppm	
	TLV-STEL		

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

Identification	Occupational exposure limits		
	PEL	400 ppm	1400 mg/m ³
Ethyl acetate CAS: 141-78-6	STEL		
N-butyl acetate CAS: 123-86-4	PEL	150 ppm	710 mg/m ³
	STEL	200 ppm	950 mg/m ³
Toluene CAS: 108-88-3	PEL	10 ppm	37 mg/m ³
	STEL	150 ppm	560 mg/m ³

Biological limit values:

Biological Exposure Indices (BEIs®) - ACGIH

Identification	BEIs®	Determinant	Sampling Time
Toluene CAS: 108-88-3	0.02 mg/L	Toluene in blood	Prior to last shift of workweek


8.2 Appropriate engineering controls:

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


SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Always provide effective general and, when necessary, local exhaust ventilation to maintain the ambient workplace atmosphere below the exposure limits.. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For additional 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


Pictogram	PPE	Remarks
 Mandatory respiratory tract protection	Filter mask for gases and vapours	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. 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	Chemical protective gloves (Material: Linear low-density polyethylene (LLDPE), Breakthrough time: > 480 min, Thickness: 0.062 mm)	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. 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	Face shield	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	Disposable clothing for protection against chemical risks, with antistatic and fireproof properties	For professional use only. Clean periodically according to the manufacturer's instructions.
 Mandatory foot protection	Safety footwear for protection against chemical risk, with antistatic and heat resistant properties	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

40 CFR Part 59 (VOC):

V.O.C.(weight-percent): 71.11 % weight
V.O.C. at 77 °F: 674.04 kg/m³ (674.04 g/L)

California Air Resources Board (CARB) - VOC Regulatory:

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

V.O.C.(weight-percent): 71.11 % weight
V.O.C. at 77 °F: 674.04 kg/m³ (674.04 g/L)

South Coast Air Quality Management District (AQMD) - VOC Regulatory:

V.O.C.(weight-percent): 71.11 % weight
V.O.C. at 77 °F: 674.04 kg/m³ (674.04 g/L)

Ozone Transport Commission (OTC) Rules - VOC Regulatory:

V.O.C.(weight-percent): 71.11 % weight
V.O.C. at 77 °F: 674.04 kg/m³ (674.04 g/L)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 68 °F: Liquid
Appearance: Not available
Color: Colorless
Odor: Characteristic
Odour threshold: Not applicable (N/A) *

Volatility:

Boiling point at atmospheric pressure: 224 °F
Vapour pressure at 77 °F: 5209 Pa
Vapour pressure at 122 °F: 16252.04 Pa (16.25 kPa)
Evaporation rate at 77 °F: Not applicable (N/A) *

Product description:

Density at 77 °F: 947.9 kg/m³
Relative density at 77 °F: 0.948
Dynamic viscosity at 77 °F: 627.71 cP
Kinematic viscosity at 77 °F: 662.19 mm²/s
Kinematic viscosity at 104 °F: Not applicable (N/A) *
Concentration: Not applicable (N/A) *
pH: Not applicable (N/A) *
Vapour density at 77 °F: Not applicable (N/A) *
Partition coefficient n-octanol/water 77 °F: Not applicable (N/A) *
Solubility in water at 77 °F: Not applicable (N/A) *
Solubility properties: Not applicable (N/A) *
Decomposition temperature: Not applicable (N/A) *
Melting point/freezing point: Not applicable (N/A) *

Flammability:

Flash Point: 51 °F
Flammability (solid, gas): Not applicable (N/A) *
Autoignition temperature: 790 °F
Lower flammability limit: Not available
Upper flammability limit: Not available

Particle characteristics:

*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)

Median equivalent diameter: Non-applicable

9.2 Other information:

Information with regard to physical hazard classes:

Explosive properties: Not applicable (N/A) *

Oxidising properties: Not applicable (N/A) *

Corrosive to metals: Not applicable (N/A) *

Heat of combustion: Not applicable (N/A) *

Aerosols-total percentage (by mass) of flammable components: Not applicable (N/A) *

Other safety characteristics:

Surface tension at 77 °F: Not applicable (N/A) *

Refraction index: Not applicable (N/A) *

*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 (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, as it does not contain substances classified as hazardous for consumption. For more information see section 3
- Corrosivity/Irritability: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.

B- Inhalation (acute effect):

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SECTION 11: TOXICOLOGICAL INFORMATION (continued)

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for inhalation. For more information see section 3.
- Corrosivity/Irritability: 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.
- C- Contact with the skin and the eyes (acute effect):
 - Contact with the skin: Produces skin inflammation.
 - Contact with the eyes: Produces eye damage after contact.
- 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: Toluene Diisocyanate (2B); Toluene (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: Suspected of damaging fertility or the unborn child
- 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:

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.
- G- Specific target organ toxicity (STOT)-repeated exposure:
 - Specific target organ toxicity (STOT)-repeated exposure: 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.
 - 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:

Not applicable (N/A)

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
	LD50 oral	LD50 dermal	
Ethyl acetate CAS: 141-78-6	LD50 oral	4100 mg/kg	Rat
	LD50 dermal	20000 mg/kg	Rabbit
	LC50 inhalation	>20 mg/L	
Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidene-trimethanol CAS: 53317-61-6	LD50 oral	>5000 mg/kg	
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	>20 mg/L	
Toluene diisocyanate homopolymer CAS: 9017-01-0	LD50 oral	>5000 mg/kg	
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	>20 mg/L	
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
Toluene CAS: 108-88-3	LD50 oral	5580 mg/kg	Rat
	LD50 dermal	12124 mg/kg	Rat
	LC50 inhalation	28.1 mg/L (4 h)	Rat

SECTION 12: ECOLOGICAL INFORMATION

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

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SECTION 12: ECOLOGICAL INFORMATION (continued)

12.1 Ecotoxicity (aquatic and terrestrial, where available):

Acute toxicity:

Identification	Concentration		Species	Genus
N-butyl acetate CAS: 123-86-4	LC50	Not applicable (N/A)		
	EC50	Not applicable (N/A)		
	EC50	675 mg/L (72 h)	Scenedesmus subspicatus	Algae
Toluene CAS: 108-88-3	LC50	13 mg/L (96 h)	Carassius auratus	Fish
	EC50	11.5 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	Not applicable (N/A)		
Ethyl acetate CAS: 141-78-6	LC50	230 mg/L (96 h)	Pimephales promelas	Fish
	EC50	717 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	3300 mg/L (48 h)	Scenedesmus subspicatus	Algae

Chronic toxicity:

Identification	Concentration		Species	Genus
N-butyl acetate CAS: 123-86-4	NOEC	Not applicable (N/A)		
	NOEC	23.2 mg/L	Daphnia magna	Crustacean
Ethyl acetate CAS: 141-78-6	NOEC	9.65 mg/L	Pimephales promelas	Fish
	NOEC	2.4 mg/L	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Substance-specific information:

Identification	Degradability		Biodegradability	
N-butyl acetate CAS: 123-86-4	BOD5	Not applicable (N/A)	Concentration	Not applicable (N/A)
	COD	Not applicable (N/A)	Period	5 days
	BOD5/COD	Not applicable (N/A)	% Biodegradable	84 %
Toluene CAS: 108-88-3	BOD5	2.5 g O2/g	Concentration	100 mg/L
	COD	Not applicable (N/A)	Period	14 days
	BOD5/COD	Not applicable (N/A)	% Biodegradable	100 %
Ethyl acetate CAS: 141-78-6	BOD5	1.36 g O2/g	Concentration	100 mg/L
	COD	1.69 g O2/g	Period	14 days
	BOD5/COD	0.8	% Biodegradable	83 %

12.3 Bioaccumulative potential:

Substance-specific information:

Identification	Bioaccumulation potential	
N-butyl acetate CAS: 123-86-4	BCF	4
	Pow Log	1.78
	Potential	Low
Toluene CAS: 108-88-3	BCF	90
	Pow Log	2.73
	Potential	Moderate
Ethyl acetate CAS: 141-78-6	BCF	30
	Pow Log	0.73
	Potential	Moderate

12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
N-butyl acetate CAS: 123-86-4	Koc	Not applicable (N/A)	Henry	Not applicable (N/A)
	Conclusion	Not applicable (N/A)	Dry soil	Not applicable (N/A)
	Surface tension	2.478E-2 N/m (77 °F)	Moist soil	Not applicable (N/A)

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SECTION 12: ECOLOGICAL INFORMATION (continued)

Identification	Absorption/desorption		Volatility	
Toluene CAS: 108-88-3	Koc	178	Henry	672.8 Pa·m ³ /mol
	Conclusion	Moderate	Dry soil	Yes
	Surface tension	2.793E-2 N/m (77 °F)	Moist soil	Yes
Ethyl acetate CAS: 141-78-6	Koc	59	Henry	13.58 Pa·m ³ /mol
	Conclusion	Very High	Dry soil	Yes
	Surface tension	2.324E-2 N/m (77 °F)	Moist soil	Yes

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

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.

Waste management (disposal and evaluation):

Follow RCRA framework and EPA regulation for to ensure that hazardous waste is managed safely and properly. Waste should not be disposed of to drains. Remind, It is the responsibility of the waste generator to evaluate whether his wastes are hazardous by characteristics or listing. See section 6 for further information about Accidental release measures.

Regulations related to waste management:

Legislation related to waste management:

40 CFR Solid Wastes - Part 239 through 282.

State regulatory requirements for generators may be more stringent than those in the federal program. Be sure to check the state's policies.

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
- 14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Not applicable (N/A)

Transport of dangerous goods by sea:

With regard to IMDG 40-20:

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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
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 applicable (N/A)
- 14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable (N/A)

Transport of dangerous goods by air:

With regard to IATA/ICAO 2023:



- 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): Not applicable (N/A)

SECTION 15: REGULATORY INFORMATION

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

100144 - Hardener PU 144 Premium**SECTION 15: REGULATORY INFORMATION (continued)**

- CALIFORNIA LABOR CODE - The Hazardous Substances List: *N-butyl acetate (123-86-4)*; *Toluene (108-88-3)*; *Ethyl acetate (141-78-6)*
 - California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986) - Birth defects or other reproductive harm: Not applicable (N/A)
 - California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986) - Cancer: Not applicable (N/A)
 - CANADA-Domestic Substances List (DSL): *N-butyl acetate (123-86-4)*; *Toluene (108-88-3)*; *Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidene-trimethanol (53317-61-6)*; *Ethyl acetate (141-78-6)*; *Toluene diisocyanate homopolymer (9017-01-0)*
 - CANADA-Non-Domestic Substances List (NDSL): Not applicable (N/A)
 - Hazardous Air Pollutants (Clean Air Act): *Toluene (108-88-3)*
 - Massachusetts RTK - Substance List: *N-butyl acetate (123-86-4)*; *Toluene (108-88-3)*; *Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidene-trimethanol (53317-61-6)*; *Ethyl acetate (141-78-6)*; *Toluene diisocyanate homopolymer (9017-01-0)*
 - Minnesota - Hazardous substances ERTK: *N-butyl acetate (123-86-4)*; *Toluene (108-88-3)*; *Ethyl acetate (141-78-6)*
 - New Jersey Worker and Community Right-to-Know Act: *N-butyl acetate (123-86-4)*; *Toluene (108-88-3)*; *Ethyl acetate (141-78-6)*
 - New York RTK - Substance list: *N-butyl acetate (123-86-4)*; *Toluene (108-88-3)*; *Ethyl acetate (141-78-6)*
 - NTP (National Toxicology Program): Not applicable (N/A)
 - OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096): Not applicable (N/A)
 - Pennsylvania Worker and Community Right-to-Know Law: *N-butyl acetate (123-86-4)*; *Toluene (108-88-3)*; *Ethyl acetate (141-78-6)*
 - Rhode Island - Hazardous substances RTK: *N-butyl acetate (123-86-4)*; *Toluene (108-88-3)*; *Ethyl acetate (141-78-6)*
 - The Toxic Substances Control Act (TSCA) : *N-butyl acetate (123-86-4)*; *Toluene (108-88-3)*; *Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidene-trimethanol (53317-61-6)*; *Ethyl acetate (141-78-6)*; *Toluene diisocyanate homopolymer (9017-01-0)*
 - Toxic chemical release reporting under EPCRA section 313 (40 CFR Part 372): *Toluene (108-88-3)*
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantities: *N-butyl acetate (5000 pounds)*; *Toluene (1000 pounds)*; *Ethyl 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:

H317: May cause an allergic skin reaction.

H336: May cause drowsiness or dizziness.

H315: Causes skin irritation.

H373: May cause damage to organs through prolonged or repeated exposure.

H361: Suspected of damaging fertility or the unborn child.

H225: Highly flammable liquid and vapour.

H319: Causes serious eye irritation.

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:

- CONTINUED ON NEXT PAGE -

SECTION 16: OTHER INFORMATION (continued)

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

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END OF SAFETY DATA SHEET