E-224
Solvent based Hardeners

SECTION 1: IDENTIFICATION

1.1 GHS Product identifier: E-224
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.

Flam. Liq. 3: Flammable liquids, Category 3, H226
Skin Sens. 1: Sensitisation, skin, Category 1, H317
STOT RE 2: Specific target organ toxicity — Repeated exposure, Hazard Category 2 (Oral), H373
STOT SE 3: Respiratory tract toxicity, single exposure, Category 3, H335
STOT SE 3: Specific toxicity causing drowsiness and dizziness, single exposure, Category 3, H336

2.2 Label elements:

29 CFR 1910.1200:

Warning

Hazard statements:

Flam. Liq. 3: H226 - Flammable liquid and vapour.
Skin Sens. 1: H317 - May cause an allergic skin reaction.
STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure (Oral).
STOT SE 3: H335 - May cause respiratory irritation.
STOT SE 3: H336 - May cause drowsiness or dizziness.

Precautionary statements:

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280: Wear protective gloves/face protection/protective clothing/respiratory protection/protective footwear.
P302+P352: IF ON SKIN: Wash with plenty of 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); Hydrocarbons, C9, aromatics; Xylene

2.3 Hazards not otherwise classified (HNOC):

Non-applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances:

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

Non-applicable

3.2 Mixtures:

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 	**25 - <50 %**
CAS: 108-65-6	**2-methoxy-1-methylethyl acetate** Flam. Liq. 3: H226 - Warning 	**25 - <50 %**
CAS: 128601-23-0	**Hydrocarbons, C9, aromatics** Asp. Tox. 1: H304; Flam. Liq. 3: H226; STOT SE 3: H335; STOT SE 3: H336 - Danger 	**25 - <50 %**
CAS: 1330-20-7	**Xylene** Acute Tox. 4: H312+H332; Asp. Tox. 1: H304; Eye Irrit. 2A: H319; Flam. Liq. 3: H226; Skin Irrit. 2: H315; STOT RE 2: H373; STOT SE 3: H335 - Danger 	**5 - <10 %**
CAS: 822-06-0	**Hexamethylene-di-isocyanate** Acute Tox. 3: H331; Eye Irrit. 2A: H319; Resp. Sens. 1: H334; Skin Irrit. 2: H315; Skin Sens. 1: H317; STOT SE 3: H335 - Danger 	**<0,2 %**

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

Other information:

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

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:

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SECTION 5: FIRE-FIGHTING MEASURES (continued)

Suitable extinguishing media:

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

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:

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.

- CONTINUED ON NEXT PAGE -

SECTION 7: HANDLING AND STORAGE (continued)

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

Minimum Temp.: 41 ºF

Maximum Temp.: 86 ºF

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		
Xylene	8-hour TWA PEL	100 ppm	435 mg/m³
CAS: 1330-20-7	Ceiling Values - TWA PEL		

US. ACGIH Threshold Limit Values (2022):

Identification	Occupational exposure limits		
2-methoxy-1-methylethyl acetate	TLV-TWA	50 ppm	
CAS: 108-65-6	TLV-STEL	75 ppm	
2-methoxypropyl acetate	TLV-TWA	20 ppm	
CAS: 70657-70-4	TLV-STEL	40 ppm	
Hexamethylene-di-isocyanate	TLV-TWA	0.005 ppm	
CAS: 822-06-0	TLV-STEL		
Xylene	TLV-TWA	100 ppm	
CAS: 1330-20-7	TLV-STEL	150 ppm	

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

Identification	Occupational exposure limits		
2-methoxy-1-methylethyl acetate	PEL	100 ppm	541 mg/m³
CAS: 108-65-6	STEL	811 ppm	
Hexamethylene-di-isocyanate	PEL	0.005 ppm	0.034 mg/m³
CAS: 822-06-0	STEL		
Xylene	PEL	100 ppm	435 mg/m³
CAS: 1330-20-7	STEL	150 ppm	655 mg/m³

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
Xylene CAS: 1330-20-7	1500 mg/g (NULL)	Methylhippuric acids in urine	End of shift

8.2 Appropriate engineering controls:

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

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

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

Pictogram	PPE	Remarks
 Mandatory respiratory tract protection	Filter mask for gases, vapours and particles	Replace when an increase in resistence 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	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): 62.38 % weight

V.O.C. at 68 ºF: 617.51 kg/m³ (617.51 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):	62.38 % weight
V.O.C. at 68 ºF:	617.51 kg/m³ (617.51 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 ºF:	Liquid
Appearance:	Fluid
Color:	Colorless
Odor:	Solvent
Odour threshold:	Non-applicable *

Volatility:

Boiling point at atmospheric pressure:	306 ºF
Vapour pressure at 68 ºF:	351 Pa
Vapour pressure at 122 ºF:	2125.41 Pa (2.13 kPa)
Evaporation rate at 68 ºF:	Non-applicable *

Product description:

Density at 68 ºF:	980 - 1000 kg/m³
Relative density at 68 ºF:	0.98 - 1
Dynamic viscosity at 68 ºF:	38 - 20 cP
Kinematic viscosity at 68 ºF:	29 mm²/s
Kinematic viscosity at 104 ºF:	Non-applicable *
Concentration:	Non-applicable *
pH:	Non-applicable *
Vapour density at 68 ºF:	Non-applicable *
Partition coefficient n-octanol/water 68 ºF:	Non-applicable *
Solubility in water at 68 ºF:	Non-applicable *
Solubility properties:	Immiscible
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *

Flammability:

Flash Point:	106 ºF
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	599 ºF
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 *

*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)

Heat of combustion:	Non-applicable *
Aerosols-total percentage (by mass) of flammable components:	Non-applicable *
Other safety characteristics:	
Surface tension at 68 ºF:	Non-applicable *
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), 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: Based on available data, the classification criteria are not met. However, it does contain substances classified as hazardous for this effect. For more information see section 3.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met. However, it contains substances classified as hazardous for inhalation. For more information see section 3.
- Corrosivity/Irritability: 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. However, it does contain substances classified as hazardous for this effect. For more information see section 3.

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

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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: Hydrocarbons, C9, aromatics (3); Xylene (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, however, it contains substances classified as dangerous with sensitising effects. For more information see section 3.
- Skin: Prolonged contact with the skin can result in episodes of allergic contact dermatitis.

F- Specific target organ toxicity (STOT) - single exposure:

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: 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:

Non-applicable

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
2-methoxy-1-methylethyl acetate	LD50 oral	8532 mg/kg	Rat
CAS: 108-65-6	LD50 dermal	5100 mg/kg	Rat
	LC50 inhalation	30 mg/L (4 h)	Rat
Hydrocarbons, C9, aromatics	LD50 oral	3492 mg/kg	Rat
CAS: 128601-23-0	LD50 dermal	3160 mg/kg	Rabbit
	LC50 inhalation	6193 mg/L (4 h)	Rat
Xylene	LD50 oral	2100 mg/kg	Rat
CAS: 1330-20-7	LD50 dermal	1100 mg/kg	Rat
	LC50 inhalation	11 mg/L (ATEi)	
Hexamethylene diisocyanate, oligomers (<0.1 % O=C=N-R-N=C=O)	LD50 oral	2660 mg/kg	Rat
CAS: 28182-81-2	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	11 mg/L (ATEi)	
Hexamethylene-di-isocyanate	LD50 oral	>5000 mg/kg	
CAS: 822-06-0	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	3 mg/L (ATEi)	

Acute Toxicity Estimate (ATE mix):

	ATE mix	Ingredient(s) of unknown toxicity
Oral	>5000 mg/kg (Calculation method)	Non-applicable
Dermal	19130.43 mg/kg (Calculation method)	0 %
Inhalation	25.17 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:

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SECTION 12: ECOLOGICAL INFORMATION (continued)

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		
	EC50	1000 mg/L (72 h)	Scenedesmus subspicatus	Algae
2-methoxy-1-methylethyl acetate	LC50	161 mg/L (96 h)	Pimephales promelas	Fish
CAS: 108-65-6	EC50	481 mg/L (48 h)	Daphnia sp.	Crustacean
	EC50	Non-applicable		

Chronic toxicity:

Identification		Concentration	Species	Genus
2-methoxy-1-methylethyl acetate	NOEC	47.5 mg/L	Oryzias latipes	Fish
CAS: 108-65-6	NOEC	100 mg/L	Daphnia magna	Crustacean
Xylene	NOEC	1.3 mg/L	Oncorhynchus mykiss	Fish
CAS: 1330-20-7	NOEC	1.17 mg/L	Ceriodaphnia dubia	Crustacean

12.2 Persistence and degradability:

Substance-specific information:

Identification	Degradability		Biodegradability	
2-methoxy-1-methylethyl acetate	BOD5	Non-applicable	Concentration	785 mg/L
CAS: 108-65-6	COD	Non-applicable	Period	8 days
	BOD5/COD	Non-applicable	% Biodegradable	100 %
Xylene	BOD5	Non-applicable	Concentration	Non-applicable
CAS: 1330-20-7	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	88 %
Hexamethylene-di-isocyanate	BOD5	Non-applicable	Concentration	100 mg/L
CAS: 822-06-0	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	28 %

12.3 Bioaccumulative potential:

Substance-specific information:

Identification	Bioaccumulation potential	
2-methoxy-1-methylethyl acetate	BCF	1
CAS: 108-65-6	Pow Log	0.43
	Potential	Low
Xylene	BCF	9
CAS: 1330-20-7	Pow Log	2.77
	Potential	Low

12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
Xylene	Koc	202	Henry	524.86 Pa·m³/mol
CAS: 1330-20-7	Conclusion	Moderate	Dry soil	Yes
	Surface tension	Non-applicable	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:

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.

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SECTION 13: DISPOSAL CONSIDERATIONS (continued)

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: Yes

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 reclassed 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. Under 49 CFR 171.4, Except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packagings transported by motor vehicles, rail cars, and aircraft

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: Yes

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:

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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:**	Yes
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: *Xylene (1330-20-7)* ; *Hexamethylene-di-isocyanate (822-06-0)*
- 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)* ; *2-methoxy-1-methylethyl acetate (108-65-6)* ; *Xylene (1330-20-7)* ; *Hexamethylene-di-isocyanate (822-06-0)*
- CANADA-Non-Domestic Substances List (NDSL): Non-applicable
- Hazardous Air Pollutants (Clean Air Act): *Xylene (1330-20-7)* ; *Hexamethylene-di-isocyanate (822-06-0)*
- Massachusetts RTK - Substance List: *Hexamethylene diisocyanate, oligomers (<0.1 % O=C=N-R-N=C=O) (28182-81-2)* ; *Xylene (1330-20-7)* ; *Hexamethylene-di-isocyanate (822-06-0)*
- Minnesota - Hazardous substances ERTK: *Xylene (1330-20-7)* ; *Hexamethylene-di-isocyanate (822-06-0)*
- New Jersey Worker and Community Right-to-Know Act: *Xylene (1330-20-7)* ; *Hexamethylene-di-isocyanate (822-06-0)*
- New York RTK - Substance list: *Xylene (1330-20-7)* ; *Hexamethylene-di-isocyanate (822-06-0)*
- NTP (National Toxicology Program): Non-applicable
- OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096): Non-applicable
- Pennsylvania Worker and Community Right-to-Know Law: *Xylene (1330-20-7)*
- Rhode Island - Hazardous substances RTK: *Xylene (1330-20-7)* ; *Hexamethylene-di-isocyanate (822-06-0)*
- The Toxic Substances Control Act (TSCA) : *Hexamethylene diisocyanate, oligomers (<0.1 % O=C=N-R-N=C=O) (28182-81-2)* ; *2-methoxy-1-methylethyl acetate (108-65-6)* ; *Xylene (1330-20-7)* ; *Hexamethylene-di-isocyanate (822-06-0)*
- Toxic chemical release reporting under EPCRA section 313 (40 CFR Part 372): *Xylene (1330-20-7)* ; *Hexamethylene-di-isocyanate (822-06-0)*

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantities: Xylene (100 pounds) ; Hexamethylene-di-isocyanate (100 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:

H335: May cause respiratory irritation.
H336: May cause drowsiness or dizziness.
H317: May cause an allergic skin reaction.
H373: May cause damage to organs through prolonged or repeated exposure (Oral).
H226: Flammable liquid and vapour.

Texts of the legislative phrases mentioned in section 3:

- CONTINUED ON NEXT PAGE -

SECTION 16: OTHER INFORMATION (continued)

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. 3: H331 - Toxic 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.
Eye Irrit. 2A: H319 - Causes serious eye irritation.
Flam. Liq. 3: H226 - Flammable liquid and vapour.
Resp. Sens. 1: H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Irrit. 2: H315 - Causes skin irritation.
Skin Sens. 1: H317 - May cause an allergic skin reaction.
STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure (Oral).
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

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END OF SAFETY DATA SHEET