



## SECTION 1: IDENTIFICATION

- 1.1 GHS Product identifier:** 100114150/100114420/100102075 - SHUBOND BLACK/BEIGE/NEXT GEN (B)  
150 ML/420 ML/75 ML
- Other means of identification:**  
Non-applicable
- 1.2 Recommended use of the chemical and restrictions on use:**  
Relevant uses (Professional users): Animal care product: Glue for horseshoes and hoof repair  
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:**  
Glue-U Adhesives B.V.  
Droogdokkeneiland 8  
5026 SR Tilburg - The Netherlands  
Phone: +31 (0)13 545 31 18  
info@glue-u.com  
www.glue-u.com
- 1.4 Emergency phone number:** +31 (0)6 24533395 Mon-Fri 08-17

## 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 toxicity if swallowed, Category 4, H302  
Eye Dam. 1: Serious eye damage, Category 1, H318  
Flam. Liq. 1: Flammable liquids, Category 1, H224  
Skin Corr. 1C: Skin corrosion, Category 1C, H314  
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:**  
Danger
- 
- Hazard statements:**  
Acute Tox. 4: H302 - Harmful if swallowed.  
Flam. Liq. 1: H224 - Extremely flammable liquid and vapour.  
Skin Corr. 1C: H314 - Causes severe skin burns and eye damage.  
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/face protection/protective clothing/respiratory protection/protective footwear.  
P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P370+P378: In case of fire: Use Foam extinguisher (AB), Dry Chemical Powder (ABC) Fire Extinguisher, Carbon dioxide extinguisher (BC) to extinguish.
- Substances that contribute to the classification**  
Methyl methacrylate; Methacrylic acid; 1,4-dimethylpiperazine; Cyclohexyl methacrylate
- 2.3 Hazards not otherwise classified (HNOC):**  
Non-applicable



### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**3.1 Substances:**

Non-applicable

**3.2 Mixtures:**

**Chemical description:** Acrylic resin

**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: 80-62-6	Methyl methacrylate	30 - <40 %
CAS: 106-58-1	1,4-dimethylpiperazine	1 - <5 %
CAS: 79-41-4	Methacrylic acid	1 - <5 %
CAS: 38668-48-3	1,1'-(p-tolylimino)dipropan-2-ol	1 - <5 %
CAS: 101-43-9	Cyclohexyl methacrylate	1 - <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:**

Request medical assistance immediately, 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:**

Request immediate medical assistance, showing the SDS of this product. Do not induce vomiting, because its expulsion from the stomach can be hazardous to the mucus of the main digestive tract, and its inhalation, to the respiratory system. Rinse out the mouth and throat, as they may have been affected during ingestion. In the case of loss of consciousness do not administrate anything orally unless supervised by a doctor. Keep the person affected at rest.

**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:



## SECTION 5: FIRE-FIGHTING MEASURES (continued)

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

### Unsuitable extinguishing media:

Water jet

### 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 Self Contained Breathing Apparatus. 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 spilled 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.

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

Spillages in water or sea:

Small spillages:

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

Large spillages:

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

### 6.4 Reference to other sections:

See sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling:

A.- General precautions for safe use

Comply with the current 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

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

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.- Specific storage requirements**

Minimum Temp.: 41 °F  
Maximum Temp.: 68 °F  
Maximum time: 6 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 assessed in the workplace:

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

Identification	Occupational exposure limits	
	8-hour TWA PEL	Ceiling Values - TWA PEL
Methyl methacrylate CAS: 80-62-6	100 ppm	410 mg/m <sup>3</sup>

US. ACGIH Threshold Limit Values (2022):

Identification	Occupational exposure limits	
	TLV-TWA	TLV-STEL
Methyl methacrylate CAS: 80-62-6	50 ppm	100 ppm
Methacrylic acid CAS: 79-41-4	20 ppm	

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

Identification		Occupational exposure limits	
		PEL	STEL
Methyl methacrylate CAS: 80-62-6	PEL	50 ppm	205 mg/m <sup>3</sup>
	STEL	100 ppm	410 mg/m <sup>3</sup>
Methacrylic acid CAS: 79-41-4	PEL	20 ppm	70 mg/m <sup>3</sup>
	STEL		

NIOSH: Immediately Dangerous To Life or Health (IDLH) Values:

Identification	Occupational exposure limits	
	TWA	IDLH Value
Methyl methacrylate CAS: 80-62-6		1000 ppm

**8.2 Appropriate engineering controls:**


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




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 and vapours (Filter type: A, B, E, K)	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: Nitrile, Breakthrough time: > 480 min, Thickness: 0.35 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

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

Emergency measure	Standards	Emergency measure	Standards
 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:

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

40 CFR Part 59 (VOC):

V.O.C.(weight-percent): 50 % weight



SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

V.O.C. at 68 °F: 504.77 kg/m<sup>3</sup> (504.77 g/L)

**California Air Resources Board (CARB) - VOC Regulatory:**

V.O.C.(weight-percent): 50 % weight

V.O.C. at 68 °F: 504.77 kg/m<sup>3</sup> (504.77 g/L)

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

V.O.C.(weight-percent): 50 % weight

V.O.C. at 68 °F: 504.77 kg/m<sup>3</sup> (504.77 g/L)

**Ozone Transport Commission (OTC) Rules - VOC Regulatory:**

V.O.C.(weight-percent): 50 % weight

V.O.C. at 68 °F: 504.77 kg/m<sup>3</sup> (504.77 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: Paste

Color:  Beige

Odor: Characteristic

Odour threshold: Non-applicable \*

**Volatility:**

Boiling point at atmospheric pressure: >95 °F

Vapour pressure at 68 °F: Non-applicable \*

Vapour pressure at 122 °F: Non-applicable \*

Evaporation rate at 68 °F: Non-applicable \*

**Product description:**

Density at 68 °F: 1009.5 kg/m<sup>3</sup>

Relative density at 68 °F: 0.5 - 1.4

Dynamic viscosity at 68 °F: 100000 mPa·s

Kinematic viscosity at 68 °F: Non-applicable \*

Kinematic viscosity at 104 °F: >20.5 mm<sup>2</sup>/s

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: Non-applicable \*

Decomposition temperature: Non-applicable \*

Melting point/freezing point: Non-applicable \*

**Flammability:**

Flash Point: >59 °F

Flammability (solid, gas): Non-applicable \*

Autoignition temperature: 570 °F

\*Non-applicable due to the nature of the product, not providing information property of its hazards.



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

Lower flammability limit: Non-applicable \*

Upper flammability limit: Non-applicable \*

### 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 \*

\*Non-applicable 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 from Safety Data Sheet.

### 10.2 Chemical stability:

Chemically stable under the indicated conditions of storage, handling and use.

### 10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

### 10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Risk of combustion	Avoid direct impact	Not applicable

### 10.5 Incompatible materials:

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

### 10.6 Hazardous decomposition products:

Contains substances highly reactive and can auto-polymerize as a result of internal peroxide accumulation. The peroxides formed in these reactions are extremely shock- and heat-sensitive.

## 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):





SECTION 11: TOXICOLOGICAL INFORMATION (continued)

- Acute toxicity: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.
- Corrosivity/Irritability: Corrosive product, if it is swallowed causes burns destroying the tissues. For more information about secondary effects from skin contact see section 2.
- 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: Prolonged inhalation of the product is corrosive to mucous membranes and the upper respiratory tract
- C- Contact with the skin and the eyes (acute effect):
  - Contact with the skin: Above all, skin contact may occur as fabrics of all thicknesses can be destroyed, resulting in burns. For more information on the secondary effects see section 2.
  - Contact with the eyes: Produces serious 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: Methyl methacrylate (3)
  - Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
  - Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
- E- Sensitizing effects:
  - Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous with sensitising effects. For more information see section 3.
  - Skin: Prolonged contact with the skin can result in episodes of allergic contact dermatitis.
- F- Specific target organ toxicity (STOT) - single exposure:
 

Causes irritation in respiratory passages, which is normally reversible and limited to the upper respiratory passages.
- G- Specific target organ toxicity (STOT)-repeated exposure:
  - Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
  - Skin: Based on available data, the classification criteria are not met, 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, as it does not 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
Methyl methacrylate CAS: 80-62-6	LD50 oral	>5000 mg/kg	
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation vapour	>20 mg/L	
1,4-dimethylpiperazine CAS: 106-58-1	LD50 oral	1116.2 mg/kg	Rat
	LD50 dermal	3000 mg/kg	Rabbit
	LC50 inhalation vapour	>20 mg/L	
Methacrylic acid CAS: 79-41-4	LD50 oral	1320 mg/kg	Rat
	LD50 dermal	500 mg/kg	Rabbit
	LC50 inhalation vapour	11 mg/L	
1,1'-(p-tolylimino)dipropen-2-ol CAS: 38668-48-3	LD50 oral	25 mg/kg	Rat
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation dust	>5 mg/L	





## SECTION 11: TOXICOLOGICAL INFORMATION (continued)

Identification		Acute toxicity		Genus
Cyclohexyl methacrylate CAS: 101-43-9	LD50 oral	12900 mg/kg		Rat
	LD50 dermal	>5000 mg/kg		
	LC50 inhalation vapour	29.8 mg/L (4 h)		Rat

### Acute Toxicity Estimate (ATE mix):

	ATE mix	Ingredient(s) of unknown toxicity
Oral	480.15 mg/kg (Calculation method)	0 %
Dermal	8571.43 mg/kg (Calculation method)	0 %
LC50 inhalation vapour	220 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

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

### 12.1 Ecotoxicity (aquatic and terrestrial, where available):

#### Acute toxicity:

Identification		Concentration	Species	Genus
Methyl methacrylate CAS: 80-62-6	LC50	191 mg/L (96 h)	Lepomis macrochirus	Fish
	EC50	69 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	170 mg/L (96 h)	Selenastrum capricornutum	Algae
1,4-dimethylpiperazine CAS: 106-58-1	LC50	94.6 mg/L (96 h)	Danio rerio	Fish
	EC50	100 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	100 mg/L (72 h)	Pseudokirchneriella subcapitata	Algae
Methacrylic acid CAS: 79-41-4	LC50	Non-applicable		
	EC50	130 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	Non-applicable		
1,1'-(p-tolylimino)dipropen-2-ol CAS: 38668-48-3	LC50	17 mg/L (96 h)	Brachydanio rerio	Fish
	EC50	28.8 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	245 mg/L (72 h)	Desmodesmus subspicatus	Algae
Cyclohexyl methacrylate CAS: 101-43-9	LC50	590 mg/L (96 h)	Danio rerio	Fish
	EC50	Non-applicable		
	EC50	Non-applicable		

#### Chronic toxicity:

Identification		Concentration	Species	Genus
Methyl methacrylate CAS: 80-62-6	NOEC	9.4 mg/L	Danio rerio	Fish
	NOEC	37 mg/L	Daphnia magna	Crustacean
Methacrylic acid CAS: 79-41-4	NOEC	Non-applicable		
	NOEC	53 mg/L	Daphnia magna	Crustacean
Cyclohexyl methacrylate CAS: 101-43-9	NOEC	9.4 mg/L	Danio rerio	Fish
	NOEC	37 mg/L	Daphnia magna	Crustacean

### 12.2 Persistence and degradability:

#### Substance-specific information:

Identification		Degradability		Biodegradability	
Methyl methacrylate CAS: 80-62-6	BOD5	Non-applicable	Concentration	100 mg/L	
	COD	Non-applicable	Period	14 days	
	BOD5/COD	Non-applicable	% Biodegradable	94.3 %	
1,4-dimethylpiperazine CAS: 106-58-1	BOD5	Non-applicable	Concentration	100 mg/L	
	COD	Non-applicable	Period	28 days	
	BOD5/COD	Non-applicable	% Biodegradable	5.6 %	



SECTION 12: ECOLOGICAL INFORMATION (continued)

Identification	Degradability		Biodegradability	
Methacrylic acid	BOD5	Non-applicable	Concentration	3 mg/L
CAS: 79-41-4	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	86 %

12.3 Bioaccumulative potential:

Substance-specific information:

Identification	Bioaccumulation potential	
Methyl methacrylate	BCF	7
CAS: 80-62-6	Pow Log	1.38
	Potential	Low
1,4-dimethylpiperazine	BCF	
CAS: 106-58-1	Pow Log	-0.26
	Potential	
Methacrylic acid	BCF	2
CAS: 79-41-4	Pow Log	
	Potential	Low

12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
Methyl methacrylate	Koc	Non-applicable	Henry	Non-applicable
CAS: 80-62-6	Conclusion	Non-applicable	Dry soil	Non-applicable
	Surface tension	2.551E-2 N/m (77 °F)	Moist soil	Non-applicable
1,4-dimethylpiperazine	Koc	49	Henry	Non-applicable
CAS: 106-58-1	Conclusion	Very High	Dry soil	Non-applicable
	Surface tension	Non-applicable	Moist soil	Non-applicable
Methacrylic acid	Koc	25	Henry	3.9E-2 Pa·m <sup>3</sup> /mol
CAS: 79-41-4	Conclusion	Very High	Dry soil	Yes
	Surface tension	2.912E-2 N/m (77 °F)	Moist soil	Yes
1,1'-(p-tolylimino)dipropyl-2-ol	Koc	10	Henry	3.98E-5 Pa·m <sup>3</sup> /mol
CAS: 38668-48-3	Conclusion	Very High	Dry soil	Non-applicable
	Surface tension	Non-applicable	Moist soil	Non-applicable

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 next characteristic per RCRA could apply to the unused product if it becomes a waste material: Corrosivity, Ignitability. The next EPA hazardous waste number could apply: D002, D001.

IT IS THE RESPONSIBILITY OF THE WASTE GENERATOR TO EVALUATE WHETHER HIS WASTES ARE HAZARDOUS BY CHARACTERISTICS OR LISTING.

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:

- |  |  |  |   |
|--|--|--|---|
|  |  | <b>14.1 UN number:</b>   | UN2924  |
|  |  | <b>14.2 UN proper shipping name:</b>   | FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Methyl methacrylate; 1,4-dimethylpiperazine) |
|  |  | <b>14.3 Transport hazard class(es):</b>  | 3   |
|  |  | Labels:  | 3, 8  |
|  |  | <b>14.4 Packing group, if applicable:</b>  | I   |
|  |  | <b>14.5 Marine pollutant:</b>  | No  |
|  |  | <b>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</b> |   |
|  |  | Physico-Chemical properties:   | see section 9   |
|  |  | <b>14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):</b>  | Non-applicable  |

### Transport of dangerous goods by sea:

With regard to IMDG 41-22:

- |  |  |  |   |
|--|--|--|---|
|  |  | <b>14.1 UN number:</b>   | UN2924  |
|  |  | <b>14.2 UN proper shipping name:</b>   | FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Methyl methacrylate; 1,4-dimethylpiperazine) |
|  |  | <b>14.3 Transport hazard class(es):</b>  | 3   |
|  |  | Labels:  | 3, 8  |
|  |  | <b>14.4 Packing group, if applicable:</b>  | I   |
|  |  | <b>14.5 Marine pollutant:</b>  | No  |
|  |  | <b>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</b> |   |
|  |  | Special regulations:   | 274   |
|  |  | EmS Codes:   | F-E, S-C  |
|  |  | Physico-Chemical properties:   | see section 9   |
|  |  | Limited quantities:  | 0   |
|  |  | Segregation group:   | Non-applicable  |
|  |  | <b>14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):</b>  | Non-applicable  |

### Transport of dangerous goods by air:

With regard to IATA/ICAO 2024:

- |  |  |  |   |
|--|--|--|---|
|  |  | <b>14.1 UN number:</b>   | UN2924  |
|  |  | <b>14.2 UN proper shipping name:</b>   | FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Methyl methacrylate; 1,4-dimethylpiperazine) |
|  |  | <b>14.3 Transport hazard class(es):</b>  | 3   |
|  |  | Labels:  | 3, 8  |
|  |  | <b>14.4 Packing group, if applicable:</b>  | I   |
|  |  | <b>14.5 Marine pollutant:</b>  | No  |
|  |  | <b>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</b> |   |
|  |  | Physico-Chemical properties:   | see section 9   |
|  |  | <b>14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):</b>  | Non-applicable  |

## SECTION 15: REGULATORY INFORMATION

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



## SECTION 15: REGULATORY INFORMATION (continued)

- CALIFORNIA LABOR CODE - The Hazardous Substances List: *Methyl methacrylate (80-62-6)* ; *Methacrylic acid (79-41-4)*
- 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): *Methyl methacrylate (80-62-6)* ; *1,4-dimethylpiperazine (106-58-1)* ; *Methacrylic acid (79-41-4)* ; *1,1'-(p-tolylimino)dipropyl-2-ol (38668-48-3)*
- CANADA-Non-Domestic Substances List (NDSL): *Cyclohexyl methacrylate (101-43-9)*
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantities: *Methyl methacrylate (80-62-6)* - U162
- Hazardous Air Pollutants (Clean Air Act): *Methyl methacrylate (80-62-6)*
- Massachusetts RTK - Substance List: *Methyl methacrylate (80-62-6)* ; *Methacrylic acid (79-41-4)*
- Minnesota - Hazardous substances ERTK: *Methyl methacrylate (80-62-6)* ; *Methacrylic acid (79-41-4)*
- New Jersey Worker and Community Right-to-Know Act: *Methyl methacrylate (80-62-6)* ; *Methacrylic acid (79-41-4)*
- New York RTK - Substance list: *Methyl methacrylate (80-62-6)* ; *Methacrylic acid (79-41-4)*
- 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: *Methacrylic acid (79-41-4)*
- Protective Action Criteria (PAC) with AEGs, ERPGs, & TEELs: *Methyl methacrylate (80-62-6)* ; *Methacrylic acid (79-41-4)*
- Rhode Island - Hazardous substances RTK: *Methyl methacrylate (80-62-6)*
- The Toxic Substances Control Act (TSCA) : *Methyl methacrylate (80-62-6)* ; *1,4-dimethylpiperazine (106-58-1)* ; *Methacrylic acid (79-41-4)* ; *1,1'-(p-tolylimino)dipropyl-2-ol (38668-48-3)* ; *Cyclohexyl methacrylate (101-43-9)*
- Toxic chemical release reporting under EPCRA section 313 (40 CFR Part 372): *Methyl methacrylate (80-62-6)*

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

It is recommended to use the information provided in this safety data sheet as a foundation for conducting workplace-specific risk assessments. These assessments will help establish the appropriate risk prevention measures for handling, using, storing, and disposing 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:

H314: Causes severe skin burns and eye damage.

H317: May cause an allergic skin reaction.

H335: May cause respiratory irritation.

H318: Causes serious eye damage.

H302: Harmful if swallowed.

H224: Extremely flammable liquid and vapour.

### Advice related to training:

According to 29 CFR 1910.1200, training on chemical hazards is necessary for employees using this product. This training will facilitate their understanding and interpretation of the safety data sheet, as well as the product label.

### 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