

MaxPox® 60 Hardener

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	• MaxPox® 60 Hardener
Trade Name	• MaxPox® 60 Hardener
Company	• Maxliner, 450 College Drive, Martinsville, VA 24112 USA
Company Contact	• info@maxlinerusa.com
Company Phone	• 1-877-426-5948
Emergency	• 24-Hour Emergency Contact: (Infotrac) 1-800-535-5053 • Local Emergency Contact: 1-800-535-5053

2. HAZARDS IDENTIFICATION

Hazard classification	This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.
	<i>Acute toxicity</i> • Category 4 – Oral
	<i>Skin corrosion</i> • Category 1B
	<i>Serious eye damage</i> • Category 1
	<i>Skin sensitization</i> • Category 1
	<i>Reproductive toxicity</i> • Category 1B
	<i>Effects on or via lactation</i>
Label elements	 Pictogram
Signal word	• Danger!
Hazards	- Harmful if swallowed. - Causes severe skin burns and eye damage. - May cause an allergic skin reaction. - May damage fertility or the unborn child. - May cause harm to breast-fed children.
Precautionary statements	
Prevention	- Obtain special instructions before use. - Do not handle until all safety precautions have been read and understood. - Avoid breathing dust/fume/gas/mist/vapors/spray. - Avoid contact during pregnancy/while nursing. - Wash skin thoroughly after handling. - Do not eat, drink or smoke when using this product. - Contaminated work clothing should not be allowed out of the workplace. - Wear protective gloves/protective clothing/eye protection/face protection.

2. HAZARDS IDENTIFICATION (CONTINUED)

<i>Response</i>	• IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. • IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. • IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. • IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. • IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. • IF exposed or concerned: Get medical advice/attention. • If skin irritation or rash occurs: Get medical advice/attention. • Wash contaminated clothing before reuse.
<i>Storage</i>	• Store locked up.
<i>Disposal</i>	• Dispose of contents/container to an approved waste disposal plant.
<i>Other hazards</i>	• No data available

3. COMPOSITION / INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
<i>Propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers</i>	25085-99-8	10.0 – 30.0%
<i>Triethylenetetramine mixture</i>	112-24-3	25.0 – 30.0%
<i>Aminoethylethanolamine</i>	111-41-1	<0.4%
<i>Tetraethylenepentamine mixture</i>	112-57-2	<0.2%
<i>3-Aminomethyl-3,5,5-trimethylcyclohexylamine (isophoronediamine)</i>	2855-13-2	30.0 – 50.0%
<i>Benzyl alcohol</i>	100-51-6	7.0 – 13.0%

Note: Liquid Epoxy Resins (LERs) are made by reacting bisphenol A and epichlorohydrin. Olin uses both CAS No. 25085-99-8 and 25068-38-6 for its LERs. Other manufacturers use CAS No. 25068-38-6 for their LERs. Accordingly, LER manufacturers consider that derivatives of LERs may be described using either CAS number as a starting material.

4. FIRST AID MEASURES

<i>General advice</i>	• First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.
<i>Inhalation</i>	• Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.
<i>Skin contact</i>	• Immediate continued and thorough washing in flowing water for at least 30 minutes is imperative while removing contaminated clothing. Prompt medical consultation is essential. Wash clothing before reuse. Properly dispose of leather items such as shoes, belts, and watchbands. Suitable emergency safety shower facility should be immediately available.

4. FIRST AID MEASURES (CONTINUED)

<i>Eye contact</i>	Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.
<i>Ingestion</i>	Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth unless the person is fully conscious.
<i>Most important symptoms and effects, both acute and delayed</i>	Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.
<i>Indication of any immediate medical attention and special treatment needed.</i> <i>Notes to physician:</i>	Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

5. FIRE FIGHTING MEASURES

<i>Suitable extinguishing media</i>	Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
<i>Unsuitable extinguishing media</i>	Do not use direct water stream. May spread fire.
<i>Special hazards arising from the substance or mixture</i> <i>Hazardous combustion products</i>	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides, Carbon dioxide, Carbon monoxide.
<i>Unusual Fire and Explosion Hazards</i>	Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

5. FIRE FIGHTING MEASURES (CONTINUED)

<i>Advice for firefighters: Fire Fighting Procedures</i>	Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.
<i>Special protective equipment for firefighters</i>	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

<i>Personal precautions, protective equipment and emergency procedures</i>	Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Keep upwind of spill. Ventilate area of leak or spill. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
<i>Environmental precautions</i>	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.
<i>Methods and materials for containment and cleaning up</i>	Contain spilled material if possible. Absorb with materials such as: Sand. Collect in suitable and properly labeled containers. Avoid contact with absorbent materials such as: Ground corn cobs. Moist organic absorbents. Peat moss. Sawdust. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

<i>Precautions for safe handling</i>	Do not get in eyes, on skin, on clothing. Do not swallow. Avoid breathing vapor. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.	
<i>Conditions for safe storage</i>	Store in a cool, dry place.	
Storage stability	Storage temperature	Shelf life
	0 - 30°C (32-86°F)	Use within 12 month

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of Listing	Value/Notation
<i>Triethylenetetramine mixture</i>	USWEEL	TWA	1 ppm
	USWEEL	TWA	Absorbed via skin
<i>Aminoethylethanolamine</i>	Dow IHG	TWA	0.06 mg/m ³
<i>Tetraethylenepentamine mixture</i>	US WEEL	TWA	5 mg/m ³
<i>Benzyl alcohol</i>	US WEEL	TWA	SKIN, DSEN
	US WEEL	TWA	10 ppm

Exposure controls

<i>Engineering controls</i>	Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.
-----------------------------	---

Eye/face protection

- Use chemical goggles.

Skin protection

<i>Hand protection</i>	Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Avoid gloves made of: Polyvinyl alcohol ("PVA"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.
------------------------	---

<i>Other protection</i>	Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.
-------------------------	--

Respiratory protection

- Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. The following should be effective types of air-purifying respirators: Organic vapor cartridge.

9. PHYSICAL & CHEMICAL PROPERTIES

<i>Physical state</i>	• Liquid
<i>Color</i>	• Yellow
<i>Odor</i>	• Amine
<i>Odor Threshold</i>	• No test data available
<i>pH</i>	• 12 <i>Literature</i>
<i>Melting point/range</i>	• Not applicable
<i>Freezing point</i>	• -35°C (-31°F) <i>Literature</i>
<i>Boiling range (760 mmHg)</i>	• 277°C (531°F) <i>Literature</i> Diethylenetriamine
<i>Flash Point</i>	• Closed cup >148°C (298°F) <i>Literature</i>
<i>Evaporation Rate</i> (Butyl Acetate=1)	• No test data available
<i>Flammability (solid, gas)</i>	• Not applicable
<i>Lower explosion limit</i>	• No test data available
<i>Upper explosion limit</i>	• No test data available
<i>Vapor pressure</i>	• 0.01 kPa at 20°C (68°F) <i>Literature</i>
<i>Relative Vapor Density (air=1)</i>	• 5 at 20°C (68°F) <i>Literature</i>
<i>Relative Density (water=1)</i>	• 0.97 <i>Literature</i>
<i>Water solubility</i>	• 100% at 20°C (68°F) <i>Literature</i>
<i>Partition coefficient: noctanol/ water</i>	• This product is a mixture. See Section 12 for individual component data.
<i>Auto-ignition temperature</i>	• No test data available
<i>Decomposition temperature</i>	• No test data available
<i>Dynamic Viscosity</i>	• 200 cP at 25°C (77°F) <i>Literature</i>
<i>Kinematic Viscosity</i>	• 700 cSt at 25°C (77°F) ASTM D 445
<i>Explosive properties</i>	• No
<i>Oxidizing properties</i>	• No
<i>Molecular weight</i>	• No test data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. CHEMICAL STABILITY & REACTIVITY INFORMATION

<i>Reactivity</i>	No data available.
<i>Chemical stability</i>	Stable under recommended storage conditions. See Storage, Section 7.
<i>Possibility of hazardous reactions</i>	Polymerization will not occur.
<i>Conditions to avoid</i>	Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Reaction with carbon dioxide may form an amine carbamate. Smoke may be generated depending on vapor pressure of mixture. Product absorbs carbon dioxide from the air.
<i>Incompatible materials</i>	- Avoid contact with oxidizing materials. - Avoid contact with: Acids, Acrylates. Alcohols, Aldehydes. Halogenated hydrocarbons, Ketones, Nitrites. - Avoid contact with metals such as: Brass, Bronze, Copper, Copper alloys. - Avoid contact with absorbent materials such as: Ground corn cobs, Moist organic absorbents, Peat moss, Sawdust.
<i>Hazardous decomposition products</i>	Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aromatic compounds, Ammonia, Ethylenediamine, Volatile amines, Hydrocarbons, Phenolics.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

<i>Acute oral toxicity</i>	- Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. - As product: Single dose oral LD50 has not been determined. - Based on information for component(s): LD50, Rat, > 5,000 mg/kg Estimated.
<i>Acute dermal toxicity</i>	- Prolonged skin contact is unlikely to result in absorption of harmful amounts. - As product: The dermal LD50 has not been determined. - Based on information for component(s): LD50, Rabbit, > 2,000 mg/kg Estimated.
<i>Acute inhalation toxicity</i>	At room temperature, exposure to vapor is minimal due to low volatility; vapor from heated material may cause adverse effects. Excessive exposure may cause severe irritation to upper respiratory tract (nose and throat) and lungs. The LC50 has not been determined.
<i>Skin corrosion/irritation</i>	Brief contact may cause severe skin burns. Symptoms may include pain, severe local redness and tissue damage.
<i>Serious eye damage/eye irritation</i>	May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.
<i>Sensitization</i>	- For skin sensitization: - A component in this mixture has caused allergic skin reactions in humans. Contains component(s) which have caused allergic skin sensitization in guinea pigs. Individuals having an allergic skin reaction to this product may have an allergic skin reaction to similar material(s). - The similar material(s) is/are: - Ethylenediamine, Triethylenetetramine (TETA), Piperazine. Aminoethylethanolamine (AEEA), Aminoethylpiperazine (AEP). - For respiratory sensitization: No relevant data found.

11. TOXICOLOGICAL INFORMATION (CONTINUED)

<i>Specific Target Organ Systemic Toxicity (Single Exposure)</i>	Material is corrosive. Material is not classified as a respiratory irritant; however, upper respiratory tract irritation or corrosivity may be expected.
<i>Specific Target Organ Systemic Toxicity (Repeated Exposure)</i>	Contains component(s) which have been reported to cause effects on the following organs in animals: lung, Respiratory tract, Central nervous system, Muscles, Urinary tract.
<i>Carcinogenicity</i>	Contains component(s) which did not cause cancer in laboratory animals.
<i>Teratogenicity</i>	Contains component(s) which caused birth defects in laboratory animals. Contains component(s) which have been toxic to the fetus in lab animal tests.
<i>Reproductive toxicity</i>	In an oral gavage screening study, DETA has been toxic to the fetus in laboratory animal tests. Contains component(s) which have interfered with fertility in animal studies.
<i>Mutagenicity</i>	Contains component(s) which were positive in in vitro genetic toxicity studies. Genetic toxicity studies in animals were negative for component(s) tested.
<i>Aspiration Hazard</i>	Based on physical properties, not likely to be an aspiration hazard.

Components Influencing Toxicology

<i>Propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers</i>	Acute inhalation toxicity: The LC50 has not been determined
<i>Triethylenetetramine mixture</i>	Acute inhalation toxicity: The LC50 has not been determined.
<i>Aminoethylethanolamine</i>	- Acute inhalation toxicity: - At room temperature, exposure to vapor is minimal due to low volatility; vapor from heated material may cause respiratory irritation. Based on the available data, narcotic effects were not observed. - The LC50 has not been determined
<i>Tetraethylenepentamine mixture</i>	- Acute inhalation toxicity: - At room temperature, exposure to vapor is minimal due to low volatility. Excessive exposure may cause irritation to upper respiratory tract (nose and throat). - The LC50 has not been determined. - Rat, 8 Hour, vapor, No deaths occurred following exposure to a saturated atmosphere.
<i>3-Aminomethyl-3,5,5-trimethylcyclohexylamine (isophorone-diamine)</i>	Acute inhalation toxicity: LC50, Rat, 4 Hour, dust/mist, > 5.01 mg/l
<i>Benzyl alcohol</i>	Acute inhalation toxicity: LC50, Rat, 4 Hour, vapour, 11 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

<i>Propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers</i>	- Acute toxicity to fish: Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested). - LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, 2 mg/l - Acute toxicity to aquatic invertebrates: EC50, Daphnia magna (Water flea), static test, 48 Hour, 1.8 mg/l - Acute toxicity to algae/aquatic plants: ErC50, Scenedesmus capricornutum (fresh water algae), static test, 72 Hour, Growth rate inhibition, 11 mg/l - Toxicity to bacteria: IC50, Bacteria, 18 Hour, Respiration rates., > 42.6 mg/l - Chronic toxicity to aquatic invertebrates: NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 0.3 mg/l MATC (Maximum Acceptable Toxicant Level), Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 0.55 mg/l
<i>Triethylenetetramine mixture</i>	- Acute toxicity to fish: Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested). May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms. LC50, Pimephales promelas (fathead minnow), static test, 96 Hour, 330 mg/l, OECD Test Guideline 203 or Equivalent - Acute toxicity to aquatic invertebrates: EC50, Daphnia magna (Water flea), static test, 48 Hour, 31.1 mg/l, OECD Test Guideline 202 or Equivalent - Acute toxicity to algae/aquatic plants: EC50, Pseudokirchneriella subcapitata (green algae), semi-static test, 72 Hour, Growth rate inhibition, 20 mg/l, OECD Test Guideline 201 or Equivalent - Toxicity to bacteria: EC50, Bacteria, 16 Hour, 680 mg/l - Chronic toxicity to aquatic invertebrates: NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 1.9 mg/l
<i>Aminoethylethanolamine</i>	- Acute toxicity to fish: Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested). LC50, Pimephales promelas (fathead minnow), 96 Hour, 640 mg/l, OECD Test Guideline 203 or Equivalent - Acute toxicity to algae/aquatic plants: ErC50, Desmodesmus subspicatus (green algae), 72 Hour, Growth rate inhibition, 353.6 mg/l, OECD Test Guideline 201 or Equivalent - Toxicity to bacteria: EC50, Bacteria, 16 Hour, > 5,000 mg/l

12. ECOLOGICAL INFORMATION (CONTINUED)

<i>Tetraethylenepentamine mixture</i>	- Acute toxicity to fish: Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested). May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms. LC50, <i>Poecilia reticulata</i> (guppy), semi-static test, 96 Hour, 420 mg/l, OECD Test Guideline 203 or Equivalent. - Acute toxicity to aquatic invertebrates: EC50, <i>Daphnia magna</i> (Water flea), static test, 48 Hour, 24.1 mg/l, OECD Test Guideline 202 or Equivalent. - Acute toxicity to algae/aquatic plants: ErC50, <i>Pseudokirchneriella subcapitata</i> (green algae), static test, 72 Hour, Growth rate inhibition, 6.8 mg/l, OECD Test Guideline 201 or Equivalent. - Toxicity to bacteria: EC50, activated sludge, static test, 1 Hour, 1,600 mg/l
<i>3-Aminomethyl-3, 5, 5-trimethylcyclohexylamine (isophoronediamine)</i>	- Acute toxicity to fish: Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested). LC50, <i>Leuciscus idus</i> (Golden orfe), semi-static test, 96 Hour, 110 mg/l, OECD Test Guideline 203 or Equivalent. - Acute toxicity to aquatic invertebrates: EC50, <i>Daphnia magna</i> (Water flea), static test, 48 Hour, 23 mg/l, OECD Test Guideline 202 or Equivalent. - Acute toxicity to algae/aquatic plants: EbC50, <i>alga Scenedesmus sp.</i>, 72 Hour, Biomass, 37 mg/l - Toxicity to bacteria: EC10, Bacteria, Static, 18 Hour, 1,120 mg/l - Chronic toxicity to aquatic invertebrates: NOEC, <i>Daphnia magna</i> (Water flea), 21 d, number of offspring, 3 mg/l
<i>Benzyl alcohol</i>	- Acute toxicity to fish: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested). LC50, <i>Pimephales promelas</i> (fathead minnow), Static, 96 Hour, 460 mg/l, Method Not Specified. - Acute toxicity to aquatic invertebrates: EC50, <i>Daphnia magna</i> (Water flea), 48 Hour, 230 mg/l, OECD Test Guideline 202 - Acute toxicity to algae/aquatic plants: EC50, <i>Pseudokirchneriella subcapitata</i> (green algae), Static, 72 Hour, Growth rate, 770 mg/l, OECD Test Guideline 201 - Toxicity to bacteria: EC50, activated sludge, Respiration inhibition, 49 Hour, Respiration rates. 2,100 mg/l, OECD 209 Test - Chronic toxicity to aquatic invertebrates: NOEC, <i>Daphnia magna</i>, semi-static test, 21 d, 51 mg/l

12. ECOLOGICAL INFORMATION (CONTINUED)

Persistence and degradability

<i>Propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers</i>	• Biodegradability: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions. • 10-day Window: Not applicable	
	<i>Biodegradation</i>	• 12 %
	<i>Exposure time</i>	• 28 d
	<i>Method</i>	• OECD Test Guideline 302B or Equivalent
	<i>Theoretical Oxygen Demand</i>	• 2.35 mg/mg Estimated
<i>Photodegradation</i>	<i>Test Type</i>	• Half-life (indirect photolysis)
	<i>Sensitizer</i>	• OH radicals
	<i>Atmospheric half-life</i>	• 1.92 Hour
	<i>Method</i>	• Estimated
<i>Triethylenetetramine mixture</i>	• Biodegradability: Biodegradation under aerobic static laboratory conditions is moderate (BOD20 or BOD28/ThOD between 10 and 40%). • 10-day Window: Fail	
	<i>Biodegradation</i>	• 0 %
	<i>Exposure time</i>	• 20 d
	<i>Method</i>	• OECD Test Guideline 301D or Equivalent
	<i>Theoretical Oxygen Demand</i>	• 3.40 mg/mg
	<i>Chemical Oxygen Demand</i>	• 1.94 mg/mg
<i>Biological oxygen demand (BOD)</i>	Incubation Time	BOD
	5 d	5.000%
	20 d	2.5 – 11%
<i>Aminoethylethanol-amine</i>	• Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. • 10-day Window: Pass	
	<i>Biodegradation</i>	• > 97 %
	<i>Exposure time</i>	• 28 d
	<i>Method</i>	• OECD Test Guideline 301F or Equivalent
	<i>Theoretical Oxygen Demand</i>	• 2.77 mg/mg
	<i>Chemical Oxygen Demand</i>	• 1,070 mg/g

12. ECOLOGICAL INFORMATION (CONTINUED)

Tetraethylenepentamine mixture	• Biodegradability: Material is not readily biodegradable according to OECD/EEC guidelines. • 10-day Window: Fail	
	Biodegradation	• 0%
	Exposure time	• 28 d
	Method	• OECD Test Guideline 301A or Equivalent • 10-day Window: Not applicable
	Biodegradation	• 17%
	Exposure time	• 84 d
	Method	• OECD Test Guideline 302A or Equivalent
	Theoretical Oxygen Demand	• 3.39 mg/mg
	Chemical Oxygen Demand	• 1.54 - 1.88 mg/mg
Biological oxygen demand (BOD)	Incubation Time	BOD
	20 d	0 - 12%
Photodegradation	Atmospheric half-life	• 0.41 Hour
	Method	• Estimated
3-Aminomethyl-3,5,5-trimethylcyclohexylamine (isophoronediamine)	• Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. • 10-day Window: Fail	
	Biodegradation	• 8%
	Exposure time	• 28 d
	Method	• OECD Test Guideline 301A or Equivalent • 10-day Window: Fail
	Biodegradation	• 42%
	Exposure time	• 3 d
	Method	• OECD Test Guideline 301A or Equivalent • 10-day Window: Not applicable
	Theoretical Oxygen Demand	• 3.38 mg/mg
Photodegradation	Test Type	• Half-life (indirect photolysis)
	Sensitizer	• OH radicals
	Atmospheric half-life	• 0.126 d
	Method	• Estimated

12. ECOLOGICAL INFORMATION (CONTINUED)

Benzyl alcohol	• Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. • 10-day Window: Not applicable	
	<i>Biodegradation</i>	• 92 - 96 %
	<i>Exposure time</i>	• 14 d
	<i>Method</i>	• OECD Test Guideline 301C or Equivalent
	<i>Theoretical Oxygen Demand</i>	• 2.52 mg/mg
<i>Photodegradation</i>	<i>Test Type</i>	• Half-life (indirect photolysis)
	<i>Sensitizer</i>	• OH radicals
	<i>Atmospheric half-life</i>	• 1.296 d
	<i>Method</i>	• Estimated
Bioaccumulative Potential		
<i>Propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers</i>	• Biodegradability: Bioconcentration potential is moderate (BCF between 100 and 3000 or log Pow between 3 and 5). • 10-day Window: Not applicable	
	<i>Partition coefficient: n-octanol/water (log Pow)</i>	• 3.242 at 25 °C Estimated
<i>Triethylenetetramine mixture</i>	<i>Bioaccumulation</i>	• Bioconcentration potential is low (BCF < 100 or log Pow < 3)
	<i>Partition coefficient: n-octanol/water (log Pow)</i>	• -2.65 Estimated
<i>Aminoethylethanol-amine</i>	<i>Bioaccumulation</i>	• Bioconcentration potential is low (BCF < 100 or log Pow < 3).
	<i>Partition coefficient: n-octanol/water (log Pow)</i>	• -1.46 Measured
	<i>Bioconcentration factor (BCF)</i>	• < 3.7 Cyprinus carpio (Carp) 42 d Measured
<i>Tetraethylenepentamine mixture</i>	<i>Bioaccumulation</i>	• No bioconcentration is expected because of the relatively high water solubility
	<i>Partition coefficient: n-octanol/water (log Pow)</i>	• -3.16 Estimated
<i>3-Aminomethyl-3,5,5-trimethylcyclohexylamine (isophoronediamine)</i>	<i>Bioaccumulation</i>	• Bioconcentration potential is low (BCF < 100 or log Pow < 3)
	<i>Partition coefficient: n-octanol/water (log Pow)</i>	• 0.79 Measured
<i>Benzyl alcohol</i>	<i>Bioaccumulation</i>	• Bioconcentration potential is low (BCF < 100 or log Pow < 3)
	<i>Partition coefficient: n-octanol/water (log Pow)</i>	• 1.10 Measured

12. ECOLOGICAL INFORMATION (CONTINUED)**Mobility in soil**

<i>Propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers</i>	Potential for mobility in soil is low (Koc between 500 and 2000). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process. <i>Partition coefficient (Koc)</i> • 1800 - 4400 Estimated
<i>Triethylenetetramine mixture</i>	Potential for mobility in soil is very high (Koc between 0 and 50). <i>Partition coefficient (Koc)</i> • 4.1 - 310 Estimated
<i>Aminoethylethanolamine</i>	Potential for mobility in soil is very high (Koc between 0 and 50). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process. <i>Partition coefficient (Koc)</i> • 3.5 Estimated
<i>Tetraethylenepentamine mixture</i>	Potential for mobility in soil is very high (Koc between 0 and 50). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process. <i>Partition coefficient (Koc)</i> • 3.6 - 1098 Estimated
<i>3-Aminomethyl-3,5,5-trimethylcyclohexylamine (isophoronediamine)</i>	Potential for mobility in soil is medium (Koc between 150 and 500). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process. <i>Partition coefficient (Koc)</i> • 340 Estimated.
<i>Benzyl alcohol</i>	Potential for mobility in soil is very high (Koc between 0 and 50). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process. <i>Partition coefficient (Koc)</i> • 16 Estimated

13. DISPOSAL CONSIDERATIONS

Disposal Methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

14. TRANSPORT INFORMATION**DOT**

<i>Proper shipping name</i>	Amines, liquid, corrosive, n.o.s. (3-Aminomethyl-3,5,5-trimethylcyclohexylamine (isophoronediamine), Triethylenetetramine mixture)
<i>UN number</i>	UN 2735
<i>Class</i>	8
<i>Packaging group</i>	II

Classification for SEA transport (IMO-IMDG)

<i>Proper shipping name</i>	Amines, liquid, corrosive, n.o.s. (3-Aminomethyl-3,5,5-trimethylcyclohexylamine (isophoronediamine), Triethylenetetramine mixture)
<i>UN number</i>	UN 2735
<i>Class</i>	8
<i>Packaging group</i>	II
<i>Marine pollutant</i>	Epoxy resin
<i>Transport in bulk according to Annex I or II or MARPOL 73/78 and the IBC or IGC Code</i>	Consult IMO regulations before transporting ocean bulk.

Classification for AIR transport (IATA/ICAO)

<i>Proper shipping name</i>	Amines, liquid, corrosive, n.o.s. (3-Aminomethyl-3,5,5-trimethylcyclohexylamine (isophoronediamine), Triethylenetetramine mixture)
<i>UN number</i>	UN 2735
<i>Class</i>	8
<i>Packaging group</i>	II

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

<i>OSHA Hazard Communication Standard</i>	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
<i>Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312</i>	- Acute Health Hazard - Chronic Health Hazard
<i>Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 313</i>	This material does not contain any chemical components with known CAS numbers that exceed the threshold (DeMinimis) reporting levels established by SARA Title III, Section 313.
<i>Pennsylvania Worker and Community Right-To-Know Act</i>	The following chemicals are listed because of the additional requirements of Pennsylvania law:
Components	CASRN
Triethylenetetramine mixture	112-24-3
Benzyl alcohol	100-51-6
<i>California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)</i>	This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.
<i>United States TSCA Inventory (TSCA)</i>	All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Hazard Rating System NFPA	Health	Fire	Reactivity
	3	1	0
Legend	Absorbed via skin	• Absorbed via skin	
	Dow IHG	• Dow Industrial Hygiene Guideline	
	SKIN, DSEN	• Absorbed via Skin, Skin Sensitizer	
	TWA	• 8-hr, time-weighted average (TWA)	
	US WEEL	• USA. Workplace Environmental Exposure Levels (WEEL)	
Information Source and References	• This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.		
Disclaimer	• MAXLINER urges each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific SDSs, we are not and cannot be responsible for SDSs obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version.		