

PRODUCT NAME(S): Rhino® 3176 Hardener
SECTION 1 – IDENTIFICATION

Manufacturer's Info:
Rhino Linings Corporation
 9747 Businesspark Avenue
 San Diego, CA 92131

Product Name: Rhino® 3176 Hardener
Chemical Family: Polyamine
Recommended Use: Epoxy Curing Agent

Information phone: (858) 450 0441
Emergency contact: CHEMTREC (800) 424 9300

SECTION 2 – HAZARD(S) IDENTIFICATION
OSHA Hazard Communication Standard:

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

GHS-Label Elements:

Signal Word:
 DANGER

Pictogram(s):


GHS 05



GHS 08



GHS 07



GHS 09

Classification of the substance or mixture:

Hazard Class	Category	Hazard Statement Codes	Hazard Statements
Acute Toxicity – Oral	4	H302	Harmful if swallowed
Acute Toxicity – Dermal	4	H312	Harmful in contact with skin
Acute Toxicity – Inhalation	4	H332	Harmful if inhaled
Skin Corrosion/Irritation	1B	H314	Causes severe skin burns and eye damage
Serious Eye Damage/Eye Irritation	1	H318	Cause serious eye damage
Skin Sensitization	1	H317	May cause an allergic skin reaction
Reproductive Toxicity	2	H361	Suspected of damaging fertility or the unborn child
STOT-RE	2	H373	May cause damage to organs through prolonged or repeated exposure
Aquatic Hazard – Acute	2	H401	Toxic to aquatic life
Aquatic Hazard – Chronic	2	H411	Toxic to aquatic life with long lasting effects

Precautionary Statements:

Prevention:	P201 P202 P260 P264 P270 P271 P272 P273 P280 P281	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust, fume, gas, mist vapors, spray. Wash exposed area with plenty of water and soap thoroughly after handling. Do not eat, drink, or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves, protective clothing, eye protection, face protection. Use personal protective equipment as required.
Response:	P301+P330+P331 P303+P361+P353 P333+P313 P363 P304+P340 P305+P351+P338 P310 P308+P313 P314 P391	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or a rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. 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. Get medical advice/attention if you feel unwell. Collect spillage.
Storage:	P405	Store locked up.
Disposal:	P501	Dispose of contents/container to hazardous or special waste collection point in accordance with local, regional, national, international regulations.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Components	CAS #	EC #	Concentration, %
Tetraethylenepentamine	112-57-2	203-986-2	50 – 60
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and Triethylenetetramine	68082-29-1	500-191-5	5 – 10
Triethylenetetramine	112-24-3	203-950-6	0.5 – 2
Propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers	25085-99-8	607-537-5	10 – 15
Benzyl Alcohol	100-51-6	202-859-9	5 – 10
Curing Agent	Proprietary	Proprietary	10 – 15

SECTION 4 – FIRST-AID MEASURES**Description of First Aid measures:**

- Inhalation:** Move to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory problems, seek medical attention.
- Skin:** Wash material off of the skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes immediately and wash them before reuse. Seek immediate medical attention.
- Eye:** Rinse cautiously with water for several minutes, especially under the eyelids. Remove contact lenses, if present and easy to do. Continue rinsing for at least 15 minutes. Do not rub eyes in order to prevent corneal injury. Seek immediate medical attention.
- Ingestion:** Remove the exposed person to fresh air and keep at rest in a position comfortable for breathing. Remove dentures if any. Rinse mouth thoroughly with water and then give 60 to 240 mL (2 to 8 oz) of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Never induce vomiting or give anything by mouth if the person is unconscious or having convulsions. Seek immediate medical attention.

Most important symptoms/effects, acute and delayed: See Section 11 for more details.

General advice for First Aid responders: No action should be taken involving any personal risk or without suitable training. If potential for exposure exist refer to Section 8 for specific personal protective equipment. Show this SDS to physician.

Note to physician: Specific antidotes or neutralizers do not exist. Treatment should be supportive and based on the judgment of the physician in response to the reaction of the patient. Recommended medical monitoring for at least 24hours.

SECTION 5 – FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire: Alcohol-resistant foam, Carbon dioxide (CO₂), Dry Chemical, Dry sand, or Limestone powder.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: This product is non-flammable and non-combustible. Containers at risk from fire should be cooled with water spray and, if possible, removed from the danger area. Hazardous combustion products: carbon, and nitrogen (Section 3).

Special Protective Equipment and Precautions for fire-fighters: Wear NIOSH or OSHA approved self-contained breathing apparatus in positive pressure mode with full face piece and full protective gear. Isolate the scene by removing all persons from the incident area. No action should be taken involving any personal risk or without suitable training.

Further Information: Do not allow run-off from fire fighting to enter drains or water courses. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Keep unnecessary and unprotected personnel from entering. Ensure adequate ventilation/exhaust extraction. Use protective equipment as described in Section 8. Do not touch or walk through spilled material; spilled material may cause a slipping hazard.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. Inform the relevant authorities if the product has caused environmental pollution. See Section 12 for more details.

Methods and materials for containment and cleaning up: Remove mechanically; cover the remainder with non-combustible absorbent material (e.g. sand, earth, vermiculite or diatomaceous earth). Following absorption, transfer into properly labeled chemical waste containers. If necessary, repeat application of absorbent material until all liquid has been removed from the surface. Wash the spill site with soap and water. Cover container and remove from work to a well ventilated area. Properly dispose of the waste material and any contaminated equipment (i.e., broom or brush) in accordance with existing federal, state and local regulations.

For major spills: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Wash spillages into an effluent treatment plant or contain and collect with an absorbent material as described in the previous paragraph.

For minor spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly with soap and water to remove residual contamination.

Residues from spill cleanup may continue to be regulated under provisions of RCRA and require storage and disposal as hazardous waste. For major spills, see Section 1 for the Emergency contact; for further disposal measures, see Section 13.

SECTION 7 – HANDLING AND STORAGE

Precautions for safe handling: Do not breathe vapors and mists. Avoid contact with skin and eyes. Wear appropriate respiratory, eye and skin protection. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities: Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10 for details), food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed. Protect from freezing. Keep out of the reach of children.

Storage stability: Stable under normal conditions.

Recommended storage temperature: 65°-80°F

Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard 29 CFR 1910.1200. Employees and consumers should be warned of health risks associated with product use. See Section 8 for additional information on hygiene measures.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters/Occupational exposure limit values: As listed in the OSHA Occupational Chemical and/or OARS-WEEL Database.

OSHA PEL 8-hour TWA (ST) STEL (C) Ceiling Peak		NIOSH REL Up to 10-hour TWA (ST) STEL (C) Ceiling		ACGIH TLV© 8-hour TWA (ST) STEL (C) Ceiling		Cal/OSHA PEL 8-hour TWA (ST) STEL (C) Ceiling Peak	
TETRAETHYLENEPENTAMINE – CAS # 112-57-2							
PEL-TWA	---	REL-TWA	---	TLV-TWA	---	PEL-TWA	---
PEL-STEL	---	REL-STEL	---	TLV-STEL	---	PEL-STEL	---
PEL-C	---	REL-C	---	TLV-C	---	PEL-C	---
		IDLH	---				
Skin Notation	---	Skin Notation	---	Skin Notation	---	Skin Notation	---

Carcinogenicity classifications: ---

AIHA emergency response planning guidelines - ERPG-1/ERPG-2/ERPG-3: ---

 AIHA OARS-WEEL: 5 mg/m³ – Remarks: Skin/Dermal Sensitization Notation (2004)

BENZYL ALCOHOL – CAS # 100-51-6							
PEL-TWA	---	REL-TWA	---	TLV-TWA	---	PEL-TWA	---
PEL-STEL	---	REL-STEL	---	TLV-STEL	---	PEL-STEL	---
PEL-C	---	REL-C	---	TLV-C	---	PEL-C	---
		IDLH	---				
Skin Notation	NA	Skin Notation	NA	Skin Notation	NA	Skin Notation	NA

Carcinogenicity classifications: Not listed

AIHA emergency response planning guidelines - ERPG-1/ERPG-2/ERPG-3: ---

AIHA OARS-WEEL: 10 ppm (2008)

TRIETHYLENETETRAMINE– CAS # 112-24-3							
PEL-TWA	---	REL-TWA	---	TLV-TWA	---	PEL-TWA	---
PEL-STEL	---	REL-STEL	---	TLV-STEL	---	PEL-STEL	---
PEL-C	---	REL-C	---	TLV-C	---	PEL-C	---
		IDLH	---				
Skin Notation	NA	Skin Notation	NA	Skin Notation	NA	Skin Notation	NA
Carcinogenicity classifications: Not listed							
AIHA emergency response planning guidelines - ERPG-1/ERPG-2/ERPG-3: ---							
AIHA OARS-WEEL: 1 ppm (skin) (2009)							

Appropriate engineering controls: Good local and general ventilation should be sufficient to control worker exposure to airborne contaminants below recommended exposure limits. Local exhaust may be required in some areas.

Personal protective equipment:

Eye/face protection:

When directly handling the product, eye protection is required. Examples of eye protection include safety glasses with side shields or chemical goggles. Contact lenses should not be worn when working with chemicals.

Skin/body protection:

Impervious, waterproof, abrasion and alkali-resistant gloves should be worn always when working with this product. Do not rely on barrier creams in place of impervious gloves. Do not get product inside gloves.

Body should be covered with appropriate clothing (apron, arm covers or full body suit) depending on the task being performed and the risks involved. Protective clothing should be selected and used in accordance with "Guidelines for the Selection of Chemical Protective Clothing" published by ACGIH. Remove clothing and protective equipment that becomes saturated with the product and immediately wash exposed areas of the body. Wash contaminated clothing before reuse. Store work clothing separately. Appropriate footwear should be also selected based on the task being performed and the risks involved.

Respiratory protection:

Use properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product, and assigned protection factor of the selected respirator.

Additional Protective Measures: Educate and train employees in safe handling of this product. Follow all label instructions. As a general hygiene practice, wash hands and face after use. Clean water should always be readily available for emergency skin and eye washing. Use administrative controls such job rotation to supplement engineering controls. Emergency eyewash fountains and safety shower should be in close proximity as a matter of good practice.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquid
Odor:	Ammoniacal
Odor threshold:	Not available
pH:	Alkaline
Melting point/ freezing point:	Not available / 0°C
Initial boiling point and boiling range:	180°C
Flash point:	> 135°C (275°C)
Evaporation rate:	Not available for mix
Flammability (solid, gas):	Not available for mix
Upper/ lower flammability or explosive limits:	Not available
Vapor pressure:	No Data Available
Vapor density:	Not available
Specific Gravity:	.95-1.05
Solubility (water):	Not available
Partition coefficient n-octanol/water:	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity:	Not available

SECTION 10 – STABILITY AND REACTIVITY**Reactivity:**

Product will not undergo hazardous polymerization. Based on its structural properties the product is not classified as oxidizing.

Chemical stability:

Stable under recommended storage conditions.

Conditions to avoid:

Do not freeze. To avoid thermal decomposition, do not overheat.

Incompatible materials:

N-Nitrosamines, many of which are known to be potent carcinogens, may be formed when the product comes in contact with nitrous acid, nitrites or atmospheres with high nitrous oxide concentrations. Nitrous acid and other nitrosating agents, organic acids (i.e. acetic acid, citric acid etc.), Mineral acids, Oxidizing agents and Sodium hypochlorite. Products slowly corrodes copper, aluminum, zinc, and galvanized surfaces. Reaction with peroxides may result in violent decomposition of peroxide, possibly creating an explosion.

Hazardous decomposition products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced. In fire conditions, depending on temperature, air supply and presence of other materials, decomposition products can include, but are not limited to Nitric Acid, Ammonia, Nitrogen Oxides, Nitrogen oxide can react with water vapors to form corrosive nitric acid, carbon monoxide, Carbon dioxide, or Nitrosamine (Section 3).

SECTION 11 – TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Skin and Eye Contact, Inhalation and Ingestion.

Symptoms of exposure:

Acute Toxicity:

Oral:

Harmful if swallowed.

Dermal:

Harmful in contact with skin.

Inhalation:

Harmful if inhaled.

Skin corrosion / irritation:

Causes severe skin burns and eye damage.

Serious eye damage / eye irritation:

Causes serious eye damage.

Specific target organ toxicity, single exposure:

Not classified.

Aspiration hazard:

Not classified.

Chronic Toxicity:

Respiratory and Skin Sensitizer:

Skin: May cause an allergic skin reaction.

Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

- Tetraethylenepentamine – CAS # 112-57-2
- Benzyl Alcohol – CAS # 100-51-6
- Fatty acids, C18-unsatd., dimers, oligomeric reaction products – CAS # 68082-29-1
- Triethylenetetramine – CAS 112-24-3

Germ cell mutagenicity:

Not classified.

Carcinogenicity:

Not classified.

Reproductive toxicity:

Suspected of damaging fertility or the unborn child.

Specific target organ toxicity, repeated exposure:

May cause damage to organs through prolonged or repeated exposure.

Medical conditions aggravated by overexposure:

Skin and eye disorders if product not handled with adequate protection.

Toxicity test results:

This product itself has not been tested. Information given is based on data on the components and the toxicology of similar products.

Components	Test Results
Tetraethylenepentamine CAS # 112-57-2	<u>Acute Toxicity</u> Oral Toxicity, LD50: 2,140 mg/kg (Rat) Skin corrosion/irritation LD50: >660 mg/kg (rabbit), method: estimate Serious eye damage/eye irritation: can cause severe eye irritation <u>Chronic Toxicity</u> Sensitization: May cause sensitization by skin contact. Sensitization has occurred in laboratory animals after repeated exposures. Carcinogenicity: No data available STOT-SE: No test data available. STOT-RE: No test data available.

<p>Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and Triethylenetetramine CAS # 68082-29-1</p>	<p><u>Acute Toxicity</u> Oral LD50 (Rat): > 2,000 mg/kg Inhalation: No test data available. Dermal LD50 (Rabbit): > 2,000 mg/kg Skin corrosion/irritation: Causes skin irritation. Moderate skin irritation. Serious eye damage/eye irritation: Causes eye irritation.</p> <p><u>Chronic Toxicity</u> Sensitization: May cause sensitization by skin contact. Sensitization has occurred in laboratory animals after repeated exposures. Germ cell mutagenicity: No test data available. Reproductive: No test data available. Carcinogenicity: No test data available. STOT-SE: No test data available. STOT-RE: No test data available.</p>
<p>Triethylenetetramine CAS # 112-24-3</p>	<p><u>Acute Toxicity</u> Oral LD50 (Rat): > 300 - 2,000 mg/kg Inhalation: No test data available. Dermal LD50 (Rabbit): > 1,00 - 2,000 mg/kg Skin corrosion/irritation: Causes severe burns. Serious eye damage/eye irritation: Causes serious eye damage.</p> <p><u>Chronic Toxicity</u> Sensitization: May cause sensitization by skin contact. Sensitization has occurred in laboratory animals after repeated exposures. Germ cell mutagenicity: Not classified based on available information. Chromosome aberration test in vivo. Species: Mouse. Method: OECD Test Guideline 474. Result: negative Reproductive: Not classified based on available information. Developmental effects have been observed in an animal study with high doses of a related salt. The relevance of those effects are currently under investigation. Carcinogenicity: Not classified based on available information. Species: Mouse. Application Route: Dermal. Method: OECD Test Guideline 451. Result: negative STOT-SE: Not classified based on available information. STOT-RE: Not classified based on available information. Other Information: Inhalation of aerosols may cause irritation to mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. May cause allergy or asthma symptoms or breathing difficulties if inhaled.</p>
<p>Propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers CAS # 25085-99-8</p>	<p><u>Acute Toxicity</u> Oral Toxicity LD50: >15,000 mg/kg (Rat) Skin corrosion/irritation LD50: >:23, 000 mg/kg (rabbit) Inhalation: At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated material, mist or aerosols may cause respiratory irritation. LC50 has not been determined. Serious eye damage/eye irritation: can cause moderate eye irritation. Corneal injury is unlikely</p> <p><u>Chronic Toxicity</u> Sensitization: Has caused allergic skin reaction in humans. Has demonstrated the potential for contact allergy in mice. Carcinogenicity: IARC does not list this as carcinogenic. STOT-SE: No rest data available. STOT-RE: No test data available.</p>
<p>Benzyl Alcohol CAS # 100-51-6</p>	<p><u>Acute Toxicity</u> Oral LD50 (Rat): 1,620 mg/kg Dermal: No test data available. Inhalation LC50 (Rat): >4.178 mg/l, 4 h (OECD Test Guideline 403) Skin corrosion/irritation (Rabbit): No skin irritation (OECD Test Guideline 404) Serious eye damage/eye irritation (Rabbit): Irritating (OECD Test Guideline 405)</p>

	<p><u>Chronic Toxicity</u> Sensitization: Negative (Maximisation test) (OECD Test Guideline 406) Germ cell mutagenicity: No test data available. Carcinogenicity: No test data available. STOT-SE: No test data available. STOT-RE: No test data available. Additional Information: RTECS: DN3150000 – Central nervous system depression. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Liver - Irregularities - Based on Human Evidence</p>
Curing Agent CAS # Proprietary	<p><u>Acute Toxicity</u> Oral: 842.54 mg/kg Dermal: 6,810.36 mg/kg Inhalation: No test data available. Skin corrosion/irritation: Irritating. Moderate skin irritation, Non-corrosive in an in vitro test. Serious eye damage/eye irritation: Irritating. Non-corrosive in an in vitro test. Corneal edema may give rise to a perception of "blue haze" or "fog" around lights. This effect is temporary and has no known residual effect. Product vapor can cause glaucopsia (corneal edema) when absorbed into the tissue of the eye from the atmosphere.</p> <p><u>Chronic Toxicity</u> Sensitization: Dermal sensitization to this product or component has been seen in some humans. The results of a test on guinea pigs showed this substance to be a weak skin sensitizer. Sensitization has occurred in laboratory animals after repeated exposures. Germ cell mutagenicity: Ames test: negative Based on available data, the classification criteria are not met. (OECD 476)negative Based on available data, the classification criteria are not met. Chromosomal aberration (OECD 473): negative Based on available data, the classification criteria are not met. Reproductive: Has been shown to cause reproductive/teratogenic effects in laboratory animals. Carcinogenicity: No test data available. STOT-SE: No test data available. STOT-RE: Tested in rats for systemic effects in a subchronic (28-day) oral study at doses ranging from 15 to 300 mg/kg/day. Effects seen at 300 mg/kg/day included decreased survival, decreased body weight gain, increased liver, kidney, and adrenal weights and histological changes in the liver, kidney, adrenals and spleen. The No-Observed-Adverse-Effect-Level (NOAEL) was 15 mg/kg/day.</p>

The products in question have been evaluated against the Hazardous Products Regulations (WHMIS 2015) and no additional classifications, ingredient disclosure or exposure limits are required for those regulations.

SECTION 12 – ECOLOGICAL INFORMATION
Ecotoxicity:

Toxic to aquatic life with long lasting effects. Do not allow to enter soil, waterways or waste canal. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Persistence and degradability:

Not readily biodegradable by OECD criteria.

Bioaccumulative potential:

Not known.

Mobility in soil:

Not known.

Other adverse effects:

Not known.

Ecotoxicity test results:

This product itself has not been tested. Information given is based on data on the components and the toxicology of similar products.

Components	Test Results
Tetraethylenepentamine CAS # 112-57-2	<u>Aquatic Toxicity</u> Fish LC50: Poecilia reticulata (guppy) - 420 mg/l - 96.0 h Invertebrates EC50: Daphnia magna (Water flea) - 24 mg/l - 48 h Algae/aquatic plants IC50: Pseudokirchneriella subcapitata (green algae) - 2 mg/l - 72 h <u>Ecological Data</u> Biodegradation: No test data available. Bioaccumulation potential: No test data available. Mobility in soil: No test data available. Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and Triethylenetetramine CAS # 68082-29-1	<u>Aquatic Toxicity</u> Fish: No test data available. Invertebrates: No test data available. Algae/aquatic plants: No test data available. <u>Ecological Data</u> Biodegradation: No test data available. Bioaccumulation potential: No test data available. Mobility in soil: No test data available. Other adverse effects: Do not allow to enter soil, waterways or waste water canal.
Triethylenetetramine CAS # 112-24-3	<u>Aquatic Toxicity</u> Fish LC50 Pimephales promelas (Fathead minnow): > 100 mg/l – 96.0 h Invertebrates EC50 Daphnia magna (Water flea): > 10 – 100 mg/l – 48 h Algae/aquatic plants ErC50 Pseudokirchneriella subcapitata (Green algae): > 10 – 100 mg/l – 72 h Chronic toxicity NOEC Daphnia magna (Water flea): > 1 - 10 mg/l – 21 d <u>Ecological Data</u> Biodegradability: Not readily biodegradable – OECD Test Guideline 301D Bioaccumulation potential: Not expected considering the low log Pow value. Mobility in soil: Immobile Biochemical Oxygen Demand (BOD): No test data available. Hazardous to the ozone layer: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances. Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.

<p>Propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers CAS # 25085-99-8</p>	<p><u>Aquatic Toxicity</u> 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). Fish LC50 Oncorhynchus mykiss (Rainbow trout): 2 mg/l – 96.0 h Invertebrates EC50 Daphnia magna (Water flea): 1.8 mg/l – 48 h Algae/aquatic plants ErC50 Scenedesmus capricornutum (Fresh water algae): 11 mg/l – 72 h Bacteria IC50: > 42.6 mg/l – 18 h Chronic toxicity MATC (Maximum Acceptable Toxicant Level), Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 0.55 mg/l</p> <p><u>Ecological Data</u> Biodegradability: Not readily biodegradable – OECD Test Guideline 302B Bioaccumulation potential: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). Partition coefficient: n-octanol/water(log Pow): 3.242 at 25 °C Estimated. Mobility in soil: 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. Partition coefficient (Koc): 1800 - 4400 Estimated.</p>
<p>Benzyl Alcohol CAS # 100-51-6</p>	<p><u>Aquatic Toxicity</u> Fish LC50 Pimephales promelas (Fathead minnow): 460 mg/l – 96.0 h Invertebrates EC50 Daphnia magna (Water flea): 230 mg/l – 48 h Algae/aquatic plants ErC50 Pseudokirchneriella subcapitata (Green algae): 700 mg/l – 72 h</p> <p><u>Ecological Data</u> Biodegradation: Readily biodegradable. 92-96%, 14 d – OECD Test Guideline 301C Biochemical Oxygen Demand (BOD): 1,550 mg/g (Lit.) Theoretical Oxygen Demand (ThBOD): 2,515 mg/g (IUCLID) Ratio BOD/ThBOD: 62% (Lit.) Bioaccumulation potential: No test data available. Mobility in soil: No test data available.</p>
<p>Curing Agent CAS # Proprietary</p>	<p>No test data available. Other adverse effects: Do not allow to enter soil, waterways or waste water canal.</p>

SECTION 13 – DISPOSAL CONSIDERATIONS

Product Disposal: The generation of waste should be avoided or minimized wherever possible. If product becomes a waste, it does not meet criteria of hazardous waste as defined in 40 CFR 261, Subpart C and D. Do NOT discharge into sewer system. Spill cleanup residues may still be subject to RCRA storage and disposal requirements. Dispose waste in compliance with local, state and federal regulations via licensed waste disposal contractor.

Container disposal: Even after emptying, container may retain residues. Containers should be completely emptied and safely stored until appropriately reconditioned or disposed through licensed contractor in accordance with government regulation. This material and its container must be disposed of in a safe way.

SECTION 14 – TRANSPORT INFORMATION**Land transport, U.S. DOT:**

UN/ID No.: UN2320
Proper Shipping Name: Tetraethylenepentamine
Class or Division: 8
Packing group: III
Label(s): 8

Sea transport, IMDG:

UN/ID No.: UN2320
Proper Shipping Name: Tetraethylenepentamine
Class or Division: 8
Packing group: III
Label(s): 8

Air transport, IATA/ICAO:

UN/ID No.: UN2320
Proper Shipping Name: Tetraethylenepentamine
Class or Division: 8
Packing group: III
Label(s): 8

NOTE: 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.

SECTION 15 – REGULATORY INFORMATION**U.S. FEDERAL REGULATIONS:****U.S. Toxic Substances Control Act:**

None present or none present in regulated quantities.

US. EPA CERCLA Hazardous Substances (40 CFR 302) Components:

None present or none present in regulated quantities.

SARA Section 311/312 Hazard Categories:

Refer to hazard classification information in Section 2.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A) Components:

None present or none present in regulated quantities.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required Components:

None present or none present in regulated quantities.

US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261):

Under RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

State Right-To-Know Information

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the SDS may also be applicable for state requirements. For details on your regulatory requirements, you should contact the appropriate agency in your state.

Massachusetts, New Jersey, Pennsylvania or Rhode Island Right to Know Substance Lists:

- Tetraethylenepentamine – CAS # 112-57-2
- Triethylenetetramine – CAS 112-24-3

California Prop. 65 Components:

To the best of our knowledge, this product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, as levels which would require a warning label under the statute. For more information, go to www.P65Warnings.ca.gov

NFPA Hazard Rating:

HEALTH	FIRE	INSTABILITY	SPECIFIC
3	1	0	
0 = Normal Material 1 = Slightly Hazardous 2 = Hazardous 3 = Extreme Danger 4 = Deadly	(Flash Points) 0 = Will not burn 1 = Above 200°F 2 = Below 200°F 3 = Below 100°F 4 = Below 73°F	0 = Stable 1 = Unstable if Heated 2 = Violent Chemical Change 3 = Shock and Heat May Detonate 4 = May Detonate	ACID (Acid) ALK (Alkaline) COR (Corrosive) OXY (Oxidizer) W (Use No Water)

HMIS Hazard Rating:

HEALTH	FLAMMABILITY	REACTIVITY	PROTECTIVE EQUIPMENT
3*	1	0	X
0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe *CHRONIC			X = Ask your Supervisor or Safety Specialist for handling instructions

Canada regulations/legislation:

Hazardous Products Regulations (HPR): This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the Hazardous Products Regulations (HPR).

Domestic Substance List (DSL)/Non-Domestic Substance List (NDSL): On or in compliance with the inventory.

HMIRA: Curing Agent - HMIRA registration number: 11160; Date filed: 05/06/2017

International Regulations/Inventories:

No additional data available.

SECTION 16 – OTHER INFORMATION
LEGEND

GHS	Globally Harmonized System
CAS	Chemical Abstracts Services
EC	European Community
EPA	Environmental Protection Agency
OSHA	Occupational Safety and Health Administration
ACGIH	American Conference of Governmental Industrial Hygienists
NIOSH	National Institute of Occupational Safety and Health
PEL	Permissible Exposure Limits
TLV	Threshold Limit Value
REL	Recommended Exposure Limit
TWA	Time-Weighted Average
STEL	Short-term exposure limit
HEPA	High Efficiency Particulate Air
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
STOT-SE	Specific Target Organ Toxicity following Single Exposure
STOT-RE	Specific Target Organ Toxicity following Repeated Exposure
DOT	Department of Transportation
IMDG	International maritime dangerous goods code
IATA, ICAO	International Air Transport Association, International Civil Aviation Organization
TSCA	Toxic Substances Control Act
EPCRA	Emergency Planning and Community Right-to-Know Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act