

**Section 1: Identification**

**PRODUCT IDENTIFIER:** ULTRATHIN PLUS EPOXY HARDENER

**CHEMICAL FAMILY:** Propylene glycol diamine, 2-amino-, diether with Propylene: CAS Number – 9046-10-0

p-tert-Butyl phenol: CAS Number - 98-54-4

m-Xylene-.alpha., .alpha.`-diamine CAS Number - 1477-55-0

**EMERGENCY PHONE:** CHEMTREC 800-424-9300 (US) Day or night  
 Customer No. 16568

**MANUFACTURER:** PACE Technologies  
 3601 E. 34<sup>th</sup> St., Tucson, AZ 85718  
 Tucson, Arizona USA  
 Phone: +1 520-882-6598  
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**Section 2: Hazard(s) Identification**

<b>GHS CLASIFICATION:</b>	Skin Corrosion/Irritation, Category 1 Sub-category A Corrosion to metals Skin sensitization, Category 1 Reproductive toxicity, Category 1B
<b>PICTOGRAM(s):</b>	
<b>SIGNAL WORD:</b>	Danger
<b>HAZARD STATEMENTS:</b>	<b>Hazard Statement(s):</b> H314-Causes severe skin burns and eye damage H317-May cause an allergic skin reaction H360- May damage fertility or the unborn child
<b>PRECAUTIONARY STATEMENTS:</b>	<b>Precautionary Statement(s):</b> <b>Preventions:</b> P201- Obtain special instructions before use P202- Do not handle until all safety precautions have been read and understood Use personal protective equipment as required P261- Do not breathe dust/fume/gas/mist/vapors/spray P264- Wash face, hands and any exposed skin thoroughly after handling P270- Do not eat, drink or smoke when using this product P272- Contaminated work clothing should not be allowed out of the workplace

	<p>P280- Wear protective gloves/protective clothing/eye protection/face protection</p> <p><b>Response:</b>  P305+351+338: 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  P303+361+353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. If skin irritation or rash occurs: Get medical advice/attention  P304+312: IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.  P304+340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.  P301+310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  P391: Collect spillage.</p> <p><b>Storage:</b>  P405-Store locked up</p> <p><b>Disposal:</b>  P501- Dispose of contents/container to Federal, State and Local Regulations.</p>
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**Section 3: Composition/Information on Ingredients** (The exact percentage (concentration) of composition has been withheld as a trade secret)

<u>CHEMICAL NAME</u>	<u>CAS NO.</u>	<u>%</u>
Propylene glycol diamine, 2-amino-, diether with Propylene	9046-10-0	20-50%
p-tert-Butyl phenol	98-54-4	10-20%
m-Xylene-.alpha., .alpha.`-diamine	1477-55-0	10-20%
Triphenyl phosphite	101-02-0	0-20%
Triethylene tetramine	112-24-3	0-1%
Triethanolamine	102-71-6	0-20%
Piperazine	110-85-0	0-1%
1-(2-Aminoethyl) piperazine	140-31-8	0-1%

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#### Section 4: First-Aid Measures

<b>INHALATION:</b>	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, (trained personnel should) give oxygen. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.
<b>SKIN CONTACT:</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required. May cause an allergic skin reaction.
<b>EYE CONTACT:</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention/advice.
<b>INGESTION:</b>	Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. May produce an allergic reaction. If an allergic reaction occurs, stop use and seek medical help right away.
<b>NOTES TO PHYSICIAN:</b>	Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
<b>SELF PROTECTION:</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.
<b>MOST IMPORTANT SYMPTOMS AND EFFECTS:</b>	Burning sensation. Coughing and/ or wheezing. Difficulty in breathing. Itching, Rashes. Hives. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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#### Section 5: Fire-Fighting Measures

<b>SUITABLE EXTINGUISHING MEDIA:</b>	Move containers from fire area if you can do it without risk. Dike fire control water for later disposal; do not scatter the material. Dry chemical. Carbon dioxide (CO <sub>2</sub> ). Water spray. Alcohol resistant foam.
<b>UNSUITABLE EXTINGUISHING MEDIA:</b>	CAUTION: Use of water spray when fighting fire may be inefficient.
<b>SPECIFIC HAZARDS DURING</b>	When heated, vapors may form explosive mixtures with air: indoors,

**FIRE FIGHTING:** outdoors and sewers explosion hazards. Runoff may pollute waterways. Substance may be transported in a molten form.

**SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

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## Section 6: Accidental Release Measures

**PERSONNEL PRECAUTIONS:** ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Stop leak if you can do it without risk. Wear protective gloves/protective clothing and eye/face protection.

**ENVIRONMENTAL PRECAUTIONS:** Contain run-off and dispose of properly. Prevent from entering into drains, ditches or rivers.

**CLEAN-UP METHODS – SMALL SPILLAGE:** Take up with an absorbent material and place in non-leaking containers. Seal tightly for proper disposal.

**ADDITIONAL ADVICE:** DO NOT GET WATER INSIDE CONTAINERS.

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## Section 7: Handling and Storage

**ADIVCE ON SAFE HANDLING:** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Avoid breathing vapors or mists.

**STORAGE:**

**REQUIREMENTS FOR STORAGE AREAS AND CONTAINERS:** Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials. Keep at a temperature not exceeding 50°C/122°F °C.

**INCOMPATIBLE PRODUCTS:** Strong acids. Acids.

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**Section 8: Exposure Controls/ Personal Protection**

**PROTECTIVE MEASURES:** Wear appropriate respirator and full-body protective clothing.

**ENGINEERING MEASURES:** Use ventilation as required to control vapor concentrations. Eye wash fountains and safety showers should be available for emergency use.

**EYE PROTECTION:** Do not get in eyes.  
Wear chemical goggles if there is potential contact with eyes.

**SKIN AND BODY PROTECTION:** Do not get on skin, on clothing.  
Wear chemical-resistant protective clothing such as gloves, outer clothing or apron, overshoes and a face-shield suitable to potential exposure.

**RESPIRATORY PROTECTION:** Do not breathe vapors or mists.  
Use a NIOSH-approved respirator as required to prevent overexposure.  
In accord with 29 CFR 1910.134  
Use either a full-face, atmosphere-supplying respirator or air-purifying respirator for organic vapors.  
Avoid breathing vapors which may be produced under some conditions such as heating or applications of uncured material in large surface areas (e.g., flooring and painting).  
Avoid breathing aerosols and mists which may be formed by various methods of application.

**EXPOSURE GUIDELINES:**

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
m-Xylene-.alpha., .alpha.`-diamine 1477-55-0	S* Ceiling: 0.1 mg/m3	(vacated) S* (vacated) Ceiling: 0.1 mg/m3	Ceiling: 0.1 mg/m3
Triethanolamine 102-71-6	TWA: 5 mg/m3	-	
Piperazine 110-85-0	TWA: 0.03 ppm inhalable fraction and vapor	-	

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value  
OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits  
NIOSH IDLH: Immediately Dangerous to Life or Health

## Section 9: Physical and Chemical Properties

<b>FORM:</b>	Liquid
<b>COLORS:</b>	Colorless
<b>BOILING POINT:</b>	No data available
<b>VAPOR PRESSURE:</b>	< 1 mm Hg
<b>RELATIVE VAPOR DENSITY:</b>	No data available
<b>SOLUBILITY IN WATER:</b>	Completely soluble
<b>ODOR:</b>	Acrid
<b>SPECIFIC GRAVITY:</b>	15
<b>FLASH POINT:</b>	>90 °C
<b>LOWER EXPLOSION LIMIT:</b>	No data available
<b>UPPER EXPLOSION LIMIT:</b>	No data available
<b>KINEMATIC VISCOSITY:</b>	150 mm <sup>2</sup> /s
<b>DYANAMIC VISCOSITY:</b>	150 cP

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## Section 10: Stability and Reactivity

<b>CHEMICAL STABILITY:</b>	Stable under recommended storage conditions.
<b>CONDITIONS TO AVOID:</b>	Exposure to air or moisture over prolonged periods. Excessive heat.
<b>MATERIALS TO AVOID:</b>	Strong acids. Acids.
<b>HAZARDOUS DECOMPOSITON PRODUCTS:</b>	Hazardous polymerization does not occur.

**HAZARDOUS REACTIONS:** Stable under normal use conditions.

**Section 11: Toxicological Information**

**CHRONIC HEALTH HAZARD:**

Components	Oral LD50	Dermal LD50	Inhalation LC50
Propylene glycol diamine, 2-amino-, diether with Propylene 9046-10-0	242 mg/kg ( Rat )	360 mg/kg ( Rabbit )	
p-tert-Butyl phenol 98-54-4	4000 mg/kg ( Rat )	2318 mg/kg ( Rabbit )	
m-Xylene-.alpha., .alpha.`-diamine 1477-55-0	660 mg/kg ( Rat )	2 g/kg ( Rabbit )	700 ppm ( Rat ) 1 h
Triphenyl phosphite 101-02-0	444 mg/kg ( Rat ) 1590 mg/kg ( Rat )	>2000 mg/kg ( Rabbit )	> 6.7 mg/L ( Rat ) 1 h
Triethylene tetramine 112-24-3	> 1000 mg/kg ( Rat )	550 mg/kg ( Rabbit )	-
Triethanolamine 102-71-6	4190 mg/kg ( Rat )	16 mL/kg ( Rat ) > 20 mL/kg ( Rabbit )	-
Piperazine 110-85-0	600 mg/kg ( Rat )	1590 mg/kg ( Rabbit )	-
1-(2-Aminoethyl) piperazine 140-31-8	2140 µL/kg ( Rat )	880 µL/kg ( Rabbit )	-

**POTENTIAL HEALTH HAZARD:**

**INHALATION:**

Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract. Harmful by inhalation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause sensitization in susceptible persons.

**SKIN:**

Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. Toxic in contact with skin. May be absorbed through the skin in harmful amounts. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

**EYES:** Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

**INGESTION:** Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. **HARMFUL IF SWALLOWED.** May cause additional affects as listed under "Inhalation".

**Symptoms related to the physical, chemical and toxicological characteristics**

**SYMPTOMS:** Erythema (skin redness). Burning. **MAY CAUSE BLINDNESS.** Coughing and/ or wheezing. Itching. Rashes. Hives. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**SENSITIZATION:** May cause sensitization in susceptible persons. May cause sensitization by skin contact. May cause sensitization by inhalation.

**MUTAGENIC EFFECTS:** Contains a known or suspected mutagen.

**CARCINOGENICITY:** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Components	ACGIH	IARC	NTP	OSHA
Triethanolamine 102-71-6		Group 3		

**STOT - Single Exposure:** Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from acute exposure. (STOT SE). If this product is a mixture, the classification



is not based on toxicology studies for this product, but is based solely on toxicology studies for ingredients found within this product. Detailed substance and/or ingredient information may be provided in other sections of this SDS. Target organs effects listed in this document may result from a single overexposure to this product. May cause damage to organs if swallowed. May cause damage to organs in contact with skin

STOT - Repeated Exposure Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE).

Chronic toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Effects from this product caused by acute exposure may cause permanent damage to target organs and/or may cause chronic conditions. Prolonged exposure may cause chronic effects. Repeated contact may cause allergic reactions in very susceptible persons. Contains a known or suspected mutagen. Possible risk of irreversible effects. Contains a known or suspected reproductive toxin. Avoid repeated exposure. May cause adverse liver effects.

Target organ effects Respiratory System. EYES. skin. Gastrointestinal tract (GI). May affect the genetic material in germ cells (sperm and eggs). Reproductive System. kidney. liver. blood. Cardiovascular System. digestive system. Lungs. spleen. systemic toxicity. thymus. Central Nervous System (CNS).

Aspiration hazard Respiratory System. EYES. skin. Gastrointestinal tract (GI). May affect the genetic material in germ cells (sperm and eggs). Reproductive System. kidney. liver. blood. Cardiovascular System. digestive system. Lungs. spleen. systemic toxicity. thymus. Central Nervous System (CNS).

### **Numerical measures of toxicity Product Information**

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral): 572.80 mg/kg  
ATEmix (dermal): 922.20 mg/kg (ATE)  
ATEmix (inhalation-gas): 58,800.00 ppm (4 hr)  
ATEmix (inhalation-dust/mist): 42.08 mg/l  
ATEmix (inhalation-vapor): 10.50 ATEmix

**Section 12: Ecological Information**

Harmful to aquatic life. Very toxic to aquatic life with long lasting effects

Components	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
p-tert-Butyl phenol 98-54-4	72h EC50: = 11.2 mg/L (Desmodesmus subspicatus)	96h LC50: = 6.9 mg/L (Cyprinus carpio) 96h LC50: 4.71 - 5.62 mg/L (Pimephales promelas)	EC50 = 0.21 mg/L 5 min	48h EC50: = 3.9 mg/L 48h EC50: 3.4 - 4.5 mg/L
Triethylene tetramine 112-24-3	72h EC50: = 2.5 mg/L (Desmodesmus subspicatus) 96h EC50: = 3.7 mg/L (Pseudokirchneriella subcapitata) 72h EC50: = 20 mg/L (Pseudokirchneriella subcapitata)	96h LC50: = 570 mg/L (Poecilia reticulata) 96h LC50: = 495 mg/L (Pimephales promelas)		48h EC50: = 31.1 mg/L
Triethanolamine 102-71-6	96h EC50: = 169 mg/L (Desmodesmus subspicatus) 72h EC50: = 216 mg/L (Desmodesmus subspicatus)	96h LC50: 10600 - 13000 mg/L (Pimephales promelas) 96h LC50: > 1000 mg/L (Pimephales promelas) 96h LC50: 450 - 1000 mg/L (Lepomis macrochirus)		24h EC50: = 1386 mg/L
Piperazine 110-85-0		96h LC50: > 10000 mg/L (Lepomis macrochirus)	EC50 = 430 mg/L 30 min	96h EC50: = 6915 mg/L
1-(2-Aminoethyl) piperazine 140-31-8	72h EC50: = 495 mg/L (Pseudokirchneriella subcapitata)	96h LC50: >= 100 mg/L (Oncorhynchus mykiss) 96h LC50: > 1000 mg/L (Poecilia reticulata) 96h LC50: 1950 - 2460 mg/L (Pimephales promelas)	EC50 > 10000 mg/L 17 h	48h EC50: = 32 mg/L

**PERSISTENCE AND DEGRADABILITY:**

No data available

**BIOACCUMULATION**

Components	Log Pow
p-tert-Butyl phenol 98-54-4	2.44
Triphenyl phosphite 101-02-0	4.98
Triethanolamine 102-71-6	-2.53
1-(2-Aminoethyl) piperazine 140-31-8	-1.48

**Section 13: Disposal Considerations**

**DISPOSAL METHODS:** This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

**CONTAMINATED PACKAGING:** Dispose of contents/containers in accordance with local regulations

**US EPS WASTE NUMBER:** U188

This product contains one or more substances that are listed with the State of California as a hazardous waste

**Section 14: Transportation Information**

DOT	UN/NA-No. Class Packing Group ERG No. Limited Quantity Shipments Proper shipping name	UN2735 8 II 153 <1 L AMINES, LIQUID, CORROSIVE, N.O.S. (PROPYLENE GLYCOL DIAMINE, 2-AMINO-, DIETHER WITH PROPYLENE, PHENOL)
IMDG	UN/NA-No. Class Packing Group Ems-No.. Proper shipping name	UN2735 8 II F-A, S-B AMINES, LIQUID, CORROSIVE, N.O.S. (PROPYLENE GLYCOL DIAMINE, 2-AMINO-, DIETHER WITH PROPYLENE, PHENOL)
IATA	UN/NA-No.	UN2735

	Class Packing Group ERG Code Proper shipping name	8 II 8L AMINES, LIQUID, CORROSIVE, N.O.S. (PROPYLENE GLYCOL DIAMINE, 2-AMINO-, DIETHER WITH PROPYLENE, PHENOL)
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## Section 15: Regulatory Information

### US Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories	
Acute health hazard	NO
Chronic health hazard	NO
Fire hazard	NO
Sudden Release of Pressure Hazard	NO
Reactive hazard	NO

#### CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

#### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

### US State Regulations

#### California Proposition 65

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

Components	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
m-Xylene-.alpha., .alpha.`-diamine 1477-55-0	X	X	X		
Triethylene tetramine 112-24-3	X	X	X		
Triethanolamine 102-71-6	X	X	X		
Piperazine 110-85-0	X	X	X		X
1-(2-Aminoethyl) piperazine 140-31-8	X	X	X		

**International regulations**

Mexico

**National Occupational Exposure Limits**

Components	Carcinogen Status	Exposure limits
m-Xylene-.alpha., .alpha.`-diamine 1477-55-0 ( 10 - 20% )		Mexico: Ceiling 0.1 mg/m3

Mexico - Occupational Exposure Limits – Carcinogens

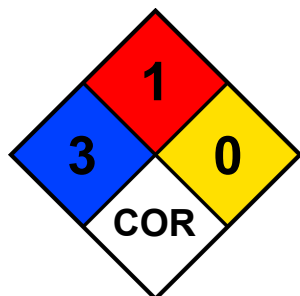
CANADA WHMIS

Hazard Class

Not Determined

**Section 16: Other Information**

**16.1 NFPA 704**



**Top, Flammability: 1 – Slight Hazard**

**Left, Health Hazard: 3 – Severe Hazard**

**Right, Reactivity: 0 – Minimal Hazard**

**Bottom, Special Notice: COR- Corrosive**

**Disclaimer:**

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DATE PREPARED: 9/19/2021 DZ

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