## SECTION 1. PRODUCT AND COMPANY INFORMATION

**MANUFACTURER:** PACE Technologies
3601 E. 34th St.
Tucson, AZ 85713

**INFORMATION PHONE:** 520-882-6598

**EMERGENCY PHONE:** CHEMTREC 800-424-9300 (US) Day or night
International call collect CHEMTREC 202-483-7616

**TRADE NAME:** EPOCAST EPOXY HARDENER

**CHEMICAL FAMILY:** Polyethylenepolyamines

**HMIS RATING:** HEALTH: 3 FLAMMABILITY: 1 REACTIVITY: 0

HAZARD RATING:

LEAST: 0 SLIGHT: 1 MODERATE: 2 HIGH: 3 EXTREME: 4

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## SECTION 2. HAZARDS IDENTIFICATION

**Emergency Overview**.

**HUMAN HEALTH HAZARDS:** Corrosive to the eyes. Corrosive to the skin. Vapors/mists may be corrosive to upper respiratory tract. Material may be corrosive to the mouth, throat, and stomach; and may cause permanent damage. May be moderately toxic if swallowed. May be toxic if absorbed through skin. May cause skin sensitization.

**SAFETY HAZARDS:** Material will not burn unless preheated.

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

| CHEMICAL NAME | CAS NO. | % |
|---|---|---|
| Polyethylenepolyamine | * | <5% |
| Polyethylenepolyamine | * | <5% |

| | | |
|---|---|---|
| Propoxylated Polyethylenepolyamines | * | >90% |

*The specific chemical identity of this component is considered trade secret information in accordance with 29 CFR 1910.1200

*See Section 16 for Canadian HMIRC trade secret registry number.

## SECTION 4. FIRST AID MEASURES

**INHALATION:** Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.

**SKIN CONTACT:** Immediately remove contaminated clothing or shoes, wipe excess from skin and flush with plenty of water for at least 15-minutes. Use soap if available or follow by washing with soap and water. Do not reuse clothing until thoroughly cleaned. Get medical attention.

**EYE CONTACT:** Immediately flush eyes with plenty of water for 15 minutes while holding eyelids open. Rinse continuously with water while on way to get medical attention.

**INGESTION:** Do not induce vomiting. Have victim rinse out mouth with water, then drink sips of water to remove taste from mouth. Do not give liquids to a drowsy, convulsing or unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Get medical attention.

### NOTES TO PHYSICIAN

**SYMPTOMS:** Irritation as noted above. Skin sensitization (allergy) may be evidenced by rashes, especially hives. Lung damage (scarring, bronchitis, emphysema) may be evidenced by shortness of breath, especially on exertion, and may be accompanied by chronic cough.

## SECTION 5. FIRE-FIGHTING MEASURES

**UNSITABLE EXTINGUISHING MEDIA:** Water or fog may cause frothing which can be violent, especially if sprayed into containers of hot or burning liquid.

**SUITABLE EXTINGUISHING MEDIA:** Use water fog, “alcohol foam”, dry chemical or carbon dioxide.

**SPECIFIC HAZARDS DURING** Material will not burn unless preheated. Delayed lung damage


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| | |
|---|---|
| **FIRE FIGHTING:** | (pulmonary edema) can be experienced after exposure to combustion products, sometimes hours after the exposure. Nitrogen oxides and other potentially hazardous nitrogen-containing compounds may be released upon combustion.<br><br>Cool fire exposed containers with water. Containers exposed to intense heat from fires should be cooled with water to prevent vapor pressure buildup which could result in container rupture. Container areas exposed to direct flame contact should be cooled with large quantities of water as needed to prevent weakening of container structure. |
| **SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS:** | Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure NIOSH approved self-contained breathing apparatus. |

## SECTION 6. ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| **PERSONNEL PRECAUTIONS:** | May burn although not readily ignitable.<br>Prevent all bodily contact with spilled material.<br>Use cautious judgment when cleaning up large spills.<br>Shut off leaks, if possible without personal risk.<br>Remove ignition sources. |
| **ENVIRONMENTAL PRECAUTIONS:** | Dike and contain.<br>Contain run-off and dispose of properly.<br>Remove contaminated soil to remove contaminated trace residues.<br>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.<br>Seal tightly for proper disposal. |
| **CLEAN-UP METHODS – LARGE SPILLAGE:** | Remove with vacuum trucks or pump to storage/salvage vessels.<br>Soak up residue with an absorbent such as clay, sand or other suitable material; place in non-leaking containers for proper disposal.<br>Flush area with water to remove trace residue. |
| **ADDITIONAL ADVICE:** | Polyethylenepolyamine is resistant to biodegradation in biological waste water treatment plants.<br>It could be toxic to the biomass in a treatment plant and could be toxic to fish.<br>Notify authorities if any exposures to the general public or environment occurs or is likely to occur.<br><br>See Section 13 for information on disposal. |


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## SECTION 7. HANDLING AND STORAGE

**ADIVCE ON SAFE HANDLING:** Do not taste or swallow. Avoid contact with skin, eyes and clothing. Avoid prolonged or repeated contact with skin, eyes and clothing. Wash thoroughly after handling. Do not pressurize drum containers to empty them. Heating this curing agent above 300 Deg. F in the presence of air may cause slow oxidative decomposition; above 500 Deg. F, polymerization may occur. Some epoxy resins can produce exothermic reactions which in large masses can cause runaway polymerization and charring of the reactants. Fumes and vapors from these thermal and chemical decompositions vary widely in composition and toxicity. Do not breathe fumes. Use a NIOSH-approved respirator as required to prevent overexposure. In accord with 29 CFR.1910.134, use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors. Containers, even those that have been emptied, can contain hazardous product residues. Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Launder contaminated clothing before reuse. Contaminated leather articles, including shoes, cannot be decontaminated and should be destroyed to prevent reuse. WARNING> May cause severe irritation to nose, throat and respiratory tract. May cause skin sensitization. May be toxic and harmful if absorbed through skin.

**STORAGE:**

**REQUIREMENTS FOR STORAGE AREAS AND CONTAINERS:** Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures.

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## SECTION 8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

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

**ENGINEERING MEASURES:** Adequate ventilation to control airborne concentrations.
Eye wash fountains and safety showers should be available for emergency use.

**EYE PROTECTION:** Do not get in eyes.
Wear chemical goggles and face shield.

**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.


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**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, the types of respirator(s) to be consider include:
Supplied-Air Respirator.
Air-Purifying Respirator for Organic Vapors.

### EXPOSURE GUIDELINES:

| Components with workplace control parameters | Regulation | Exposure time | Value | Remarks |
|---|---|---|---|---|
| Polyethylenepolyamine | ACGIH | Time Weighted Average (TWA): | 1 ppm | |
| | ACGIH | Skin designation: | | Can be absorbed through the skin. |
| | OSHA Z1A | Time Weighted Average (TWA): | 1 ppm<br>4 mg/m3 | |
| | WEEL | Time Weighted Average (TWA): | 1 ppm<br>6 mg/m3 | |
| | WEEL | Skin designation: | | Can be absorbed through the skin. |
| | ACGIH | | | None established. |
| Propoxylated Polyethyleneepolyamines | ACGIH | | | None established. |

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

**FORM:** Liquid

**ODORS:** Amine

**FLASH POINT:** >93 deg. C (199 deg F) (Pensky-Martens)

**RELATIVE VAPOR DENSITY:** >1

**SOLUBILITY IN WATER:** Insoluble.

**RELATIVE DENSITY:** 1.02


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## SECTION 10. STABILITY AND REACTIVITY

**CONDITIONS TO AVOID:** Avoid high temperatures.
Heat, flames and sparks.

**MATERIALS TO AVOID:** Can react with strong oxidizing agents, strong Lewis or mineral acid, and strong mineral and organic bases, especially primary and secondary aliphatic amines and mercaptans..
Reaction with some resins may produce considerable heat and possible violent decomposition..

**HAZARDOUS REACTIONS:** Stable under normal use conditions.
Hazardous polymerization will not occur.

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## SECTION 11. TOXICOLOGICAL INFORMATION

**ACUTE ORAL TOXICITY::** Expected to be of low toxicity, LC>50 > 2000 Mg/kg

**ACUTE DERMAL TOXICITY:** Expected to be moderately toxic, 400 < LD50 <= 2000 mg/kg

**ACUTE INHALATION TOXICITY:** Expected to be of low toxicity, LC50> 5 mg/L

**CHRONIC HEALTH HAZARD:**

| Components | Concentration | Regulation | Value | Remarks |
|---|---|---|---|---|
| Polyethylenepolyamine | <5% | US IARC Monographs on Occupational Exposures to Chemical Agents. | | This component has not been classified by the International Agency for Research on Cancer (IARC). |
| | | US IARC Monographs on Occupational Exposures to Chemical Agents. | | This component has not been classified by the International Agency for Research on Cancer (IARC). |
| Propoxylated Polyethylenepolyamines | | | | This component has not been classified by the International Agency for Research on Cancer (IARC). |


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**MUTAGENICITY:** A component has been found to be a direct acting mutagen in the AMES assay.

It gave positive results with and without activation.

Although the significance is unknown, a component has been found to increase the frequency of sister chromatid exchange.

It was also found to be positive in the unscheduled DNA mutagenicity assay.

Microbial tests and in vitro gene mutation assays were negative.

A lifetime skin painting study in mice did not result in carcinogenicity.

**TERATOGENICITY:** A component was fetotoxic and teratogenic when fed to rats at 0.83% and 1.67% of diet.

When applied dermally to the skin of pregnant guinea pigs, there was a 90% abortion rate or death of fetus with secondary to copper deficiency, resulting from the chelating activity of the component.

**OTHER INFORMATION:** Due to a component, histopathological effects of the kidney, liver, spleen, and adrenals were observed in two at lifetime feeding studies.

**POTENTIAL HEALTH HAZARD:**

**INHALATION:** Mists or vapors may be severely irritating to the nose, throat, and respiratory tract.

**SKIN:** Severely irritating to the skin.
May cause skin sensitization.
May be toxic and may be harmful if absorbed through the skin.

**EYES:** Severely irritating to the eyes causing pain, redness, swelling and blurred vision.
May cause.
Vapors may be irritating.

**INGESTION:** Not likely to be a relevant route of exposure.
May be toxic if swallowed.
May cause severe irritation to the nose, throat and respiratory tract.

**AGGRAVATED MEDICAL CONDITONS:** Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product.


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## SECTION 12. ECOLOGICAL INFORMATION

**ELIMINATION INFORMATION (PERSISTENCE AND DEGRADABILITY)**

**ECOTOXICITY EFFECTS**

**OTHER INFORMATION:** Polyethylenepolyamine is resistant to biodegradation in biological waste water treatment plants.
It could be toxic to the biomass in a treatment plant and could be toxic to fish.

## SECTION 13. DISPOSAL CONSIDERATIONS

**PRODUCT DISPOSAL:** If this material becomes a waste, it would not be a hazardous waste by RCRA criteria (40 CFR 261). Place in an appropriate disposal facility in compliance with local and federal regulations.

## SECTION 14. TRANSPORTATION INFORMATION

| | |
|---|---|
| CFR_GROUND | NOT REGULATED FOR TRANSPORT |
| IMDG | NOT REGULATED FOR TRANSPORT |
| IATA_C | NOT REGULATED FOR TRANSPORT |
| CFR_RAIL | NOT REGULATED FOR TRANSPORT |

**FURTHER INFORMATION:** Product testing has determined that this product is not regulated.

## SECTION 15. REGULATORY INFORMATION

**The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.**

**NOTIFICATION STATUS**

TSCA: All components are listed or exempt.

AICS: All components are listed or exempt.

DSL: All components are listed or exempt.


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| | |
|---|---|
| INV (CN): | All components are listed or exempt. |
| ENCS (JP): | Not all components listed. |
| EINECS: | Not all components listed. |
| KECI (KR): | All components are listed or exempt. |
| PICCS (PH): | Not all components listed. |

**U.S. EPS CERCLA HAZARDOUS SUBSTANCES (40 CFR 302)**

| | |
|---|---|
| Polyethylenepolyamine | No RQ |
| | No RQ |
| Propoxylated Polyethylenepolyamines | No RQ |

**SARA 311/312 HAZARDS**

Acute Health Hazard
Chronic Health Hazard

**U.S. EPA EMERGENCY PLANNING AND COMMUNIT RIGHT-TO-KNOW ACT (EPCRA) SARA TITLE III SECTION 313 TOXIC CHEMICALS (40 CFR 372.65) – SUPPIER NOTIFICATION REQUIRED**

| | |
|---|---|
| Polyethylenepolyamine | No Ed minimis Concentration |
| | No Ed minimis Concentration |
| Propoxylated Polyethylenepolyamine | No Ed minimis Concentration |

**U.S. EPA EMERGENCY PLANNING AND COMMUNIT RIGHT-TO-KNOW ACT (EPCRA) SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355, APPENDIX A)**

| | |
|---|---|
| Polyethylenepolyamine | Threshold Planning quantity: No TPQ |
| | Threshold Planning quantity: No TPQ |
| Propoxylated Polyethylenepolyamines | Threshold Planning quantity: No TPQ |


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| | |
|---|---|
| Polyethylenepolyamine | Reportable quantity: No RQ |
| | Reportable quantity: No RQ |

**NEW JERSEY RIGHT-TO-KNOW CHEMICAL LIST**

| | |
|---|---|
| Polyethylenepolyamine | Not Listed |
| | Not Listed |
| Propoxylated Polyethylenepolyamines | Not Listed |

**PENNSYLVANIA RIGHT-TO-KNOW CHEMICAL LIST**

| | |
|---|---|
| Polyethylenepolyamine | Not Listed |
| | Listed |
| Propoxylated Polyethylenepolyamines | Not Listed |

**MASSACHUSETTS RIGHT-TO-KNOW CHEMICAL LIST**

| | |
|---|---|
| Polyethylenepolyamine | Not Listed |
| | Listed |
| Propoxylated Polyethylenepolyamines | Not Listed |

| | | |
|---|---|---|
| **HMIS RATING** | Health: | 3 |
| | Fire: | 1 |
| | Reactivity: | 0 |

## SECTION 16. OTHER INFORMATION

**PACE Technologies, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. PACE TECHNOLOGIES, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.**


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DATE PREPARED: 8/22/2009

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