1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: .............................................. PRO-SET® 277 Adhesive Hardener.
PRODUCT CODE: .............................................. 277
CHEMICAL FAMILY: ........................................... Amine.
CHEMICAL NAME: ............................................. Modified polyamine.
FORMULA: ......................................................... Not applicable.

MANUFACTURER: Pro-Set Inc.
707 Martin Street
Bay City, MI 48706-4143, U.S.A.
Phone: 888-377-6738 or 989-671-4079
www.prosetepoxy.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS Hazard Rating:  
Health - 3  Flammability - 1  Physical Hazards - 0

DANGER! Corrosive. Severe eye, skin and respiratory irritant. May cause skin sensitization. Can cause severe eye damage. Harmful if swallowed. Harmful if absorbed through the skin. Blue gel with an ammonia-like odor.

PRIMARY ROUTE(S) OF ENTRY: .............................................. Skin contact, eye contact, inhalation.

POTENTIAL HEALTH EFFECTS:

ACUTE INHALATION: .......................................................... Exposure to high concentrations of vapor causes irritation to the respiratory tract. Coughing and chest pain may result.

CHRONIC INHALATION: .......................................................... Prolonged or repeated exposure to high concentrations of vapors may cause lung tissue damage. Exposure to low vapor concentrations may cause a sore throat.

ACUTE SKIN CONTACT: .......................................................... Moderately corrosive. May cause severe irritation with pain. Possible burns and blistering may appear upon prolonged contact. Severe exposure can result in material being absorbed in harmful amounts.

CHRONIC SKIN CONTACT: .......................................................... Repeated contact may cause skin sensitization and dermatitis. Repeated or prolonged exposure can result in material being absorbed in harmful amounts.

EYE CONTACT: .......................................................... Corrosive. Causes severe irritation, pain and possible permanent injury. Vapor absorption into the eye can cause blurred vision and injury.


SYMPTOMS OF OVEREXPOSURE: .......................................................... Development of allergic reaction or sensitization. Skin irritation and redness. Respiratory irritation or tightness of chest. Conjunctivitis or corneal damage. Liver or kidney damage.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: .............................................. Existing skin and respiratory conditions (allergies, dermatitis, asthma, bronchitis).

3. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENT NAME</th>
<th>CAS #</th>
<th>CONCENTRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyoxypropylenetriamine</td>
<td>39423-51-3</td>
<td>25-50%</td>
</tr>
<tr>
<td>Isophoronediamine</td>
<td>2855-13-2</td>
<td>&lt; 25%</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td>100-51-6</td>
<td>&lt; 25%</td>
</tr>
<tr>
<td>Reaction products of isophoronediamine with phenol/formaldehyde</td>
<td>25265-17-2</td>
<td>&lt; 25%</td>
</tr>
<tr>
<td>Amine terminated copolymer</td>
<td>&lt; 25%</td>
<td></td>
</tr>
<tr>
<td>Polymer of epichlorohydrin, bisphenol-A, and DETA</td>
<td>31326-29-1</td>
<td>&lt; 4%</td>
</tr>
<tr>
<td>Hydroxybenzene</td>
<td>108-95-2</td>
<td>&lt; 4%</td>
</tr>
<tr>
<td>Reaction products of TETA with phenol/formaldehyde</td>
<td>26950-63-0</td>
<td>&lt; 4%</td>
</tr>
<tr>
<td>Diethylenetriamine (DETA)</td>
<td>111-40-0</td>
<td>&lt; 4%</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

FIRST AID FOR EYES: .............................................................. Immediately flush with water for at least 15 minutes. Get prompt medical attention.

FIRST AID FOR SKIN: ............................................................. Remove contaminated clothing. Immediately wash skin with soap and water. Do not apply greases or ointments. Get medical attention if extreme wide spread exposure.

FIRST AID FOR INHALATION: .................................................. If symptoms occur as noted in Section 3, remove to fresh air. Get medical attention if symptoms persist or worsen.

FIRST AID FOR INGESTION: .................................................. Give conscious person at least 2 glasses of water. Do not induce vomiting. If vomiting should occur spontaneously, keep airway clear. Get medical attention.

5. FIRE FIGHTING MEASURES

FLASH POINT: ................................................................. > 200°F (PMCC).

EXTINGUISHING MEDIA: ...................................................... Dry chemical, alcohol foam, carbon dioxide (CO2), dry sand, limestone powder.

FIRE AND EXPLOSION HAZARDS: ......................................... During a fire, smoke may contain the original materials in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include, but are not limited to: oxides of nitrogen, carbon monoxide, carbon dioxide, volatile amines, ammonia, nitric acid, nitrosamines and possibly aldehydes and ketones. When mixed with sawdust, wood chips, or other cellulosic material, spontaneous combustion can occur under certain conditions. Heat is generated as the air oxidizes the amine. If the heat is not dissipated quickly enough, it can ignite the sawdust.

SPECIAL FIRE FIGHTING PROCEDURES: ................................... Use full-body protective gear and a self-contained breathing apparatus. Use of water may generate toxic aqueous solutions. Do not allow water run-off from fighting fire to enter drains or other water courses.

6. ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK PROCEDURES: .................................................. Stop leak without additional risk. Wear proper personal protective equipment. Dike and contain spill. Ventilate area. Large spill - dike and pump into appropriate container for recovery. Small spill - recover or use inert, non-combustible absorbent material (e.g., sand, clay) and shovel into suitable container. Do not use sawdust, wood chips or other cellulosic materials to absorb the spill, as the possibility for spontaneous combustion exists. Wash spill residue with warm, soapy water if necessary.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE (min./max.): ........................................ 40°F (4°C) / 90°F (32°C)

STORAGE:................................................................. Minimum feasible handling temperatures should be maintained. If stored above 100°F, nitrogen atmosphere is recommended. Keep containers tightly closed.

HANDLING PRECAUTIONS: ................................................... Use only with adequate ventilation. Do not breathe vapors or mists from heated material. Avoid contact with skin and eyes. Wash thoroughly after handling. When mixed with epoxy resin this product causes an exothermic reaction, which in large masses, can produce enough heat to damage or ignite surrounding materials and emit fumes and vapors that vary widely in composition and toxicity.

8. EXPOSURE CONTROLS/PERSOAL PROTECTION

EYE PROTECTION GUIDELINES: .............................................. A minimum of safety glasses with side shields.

SKIN PROTECTION GUIDELINES: .......................................... Wear liquid-proof, chemical resistant gloves (nitrile-butyl rubber, neoprene, butyl rubber or natural rubber) and full body-covering clothing.

Note: Pro-Set, Inc. has conducted an air sampling study using this product or similarly formulated products. The results indicate that the components sampled for (benzyl alcohol, phenol, formaldehyde and amines) were either so low that they were not detected at all or they were well below OSHA’s permissible exposure levels.

ADDITIONAL PROTECTIVE MEASURES: ............................... Use where there is immediate access to safety shower and emergency eye wash. Wash thoroughly after use. Contact lens should not be worn when working with this material. Generally speaking, working cleanly and following basic precautionary measures will greatly minimize the potential for harmful exposure to this product under normal use conditions.

OCCUPATIONAL EXPOSURE LIMITS:................................. Not established for product as whole. Refer to OSHA’s Permissible Exposure Level (PEL) or the ACGIH Guidelines for information on specific ingredients.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM ................................................................. Gel.
COLOR ............................................................................. Blue.
ODOR ............................................................................. Ammonia-like.
BOILING POINT ............................................................... > 480°F.
MELTING POINT/FREEZE POINT ................................................. No data.
PH ................................................................................. 11.1
SOLUBILITY IN WATER .................................................. Appreciable.
SPECIFIC GRAVITY .......................................................... 1.02
BULK DENSITY ................................................................. 8.51 pounds/gallon.
VISCOSITY ......................................................................... No data.
VAPOR PRESSURE .............................................................. < 1 mmHg @ 20°C.
VAPOR DENSITY ................................................................. Heavier than air.
% VOLATILE BY WEIGHT: ................................................. ASTM D 2369-07 was used to determine the Volatile Content of mixed epoxy resin and hardener.

<table>
<thead>
<tr>
<th>Resin/Hardener</th>
<th>Mix Ratio by weight</th>
<th>Density (g/L)</th>
<th>Density (lb/gal)</th>
<th>VOC Content (g/L)</th>
<th>VOC Content (lb/gal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>175/277</td>
<td>2.29:1</td>
<td>1138</td>
<td>9.50</td>
<td>11.44</td>
<td>0.10</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

STABILITY: ........................................................................... Stable.
HAZARDOUS POLYMERIZATION: ........................................... Will not occur.
INCOMPATIBILITIES: ........................................................ Organic acids, mineral acids, sodium hypochlorite, reactive metals, peroxides and oxidizing agents.
DECOMPOSITION PRODUCTS: ............................................. Very toxic fumes and gases when burned or otherwise heated to decomposition. Decomposition products may include, but not limited to: oxides of nitrogen, volatile amines, ammonia, nitric acid, nitrosamines and possibly ketones and aldehydes.

11. TOXICOLOGICAL INFORMATION

No specific oral, inhalation or dermal toxicology data is known for this product.

Oral: ................................................................. Expected to be moderately toxic.
Inhalation: ............................................................ Expected to be moderately toxic.
Dermal: ................................................................. Expected to be moderately toxic.

Adsorption of phenolic solutions through the skin may be very rapid and can cause death. Lesser exposures can cause damage to the kidney, liver, pancreas and spleen; and cause edema of the lungs. Chronic exposures can cause death from liver and kidney damage.

CARCINOGENICITY:

NTP .............................................................................. No.
IARC ............................................................................. No.
OSHA ............................................................................ No.

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA, NTP or IARC.

12. ECOLOGICAL INFORMATION

No specific data. Wastes from this product may present long term environmental hazards. Do not allow into sewers, on the ground or in any body of water.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: .............................................. Evaluation of this product using RCRA criteria shows that it is not a hazardous waste, either by listing or characteristics, in its purchased form. It is the responsibility of the user to determine proper disposal methods.

Incinerate, recycle (fuel blending) or reclaim may be preferred methods when conducted in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

DOT
D.O.T. SHIPPING NAME: .................................................. Polyamine, solid, corrosive, n.o.s.
TECHNICAL SHIPPING NAME: ...................................... Polyoxypropylenetriamine
DOT HAZARD CLASS: ...................................................... Class 8
U.N./N.A. NUMBER: ........................................................ UN 3259
PACKING GROUP: ............................................................ PG III

IATA
SHIPPING NAME: ........................................................... Polyamine, solid, corrosive, n.o.s.
TECHNICAL SHIPPING NAME: ...................................... Polyoxypropylenetriamine
15. REGULATORY INFORMATION

OSHA STATUS: Corrosive; severe irritant; possible sensitizer; possible liver and kidney toxin.

TSCA STATUS: All components are listed on TSCA inventory or otherwise comply with TSCA requirements.

Canada WHIMIS Classification: D2A, D2B, E

SARA TITLE III: This product contains phenol (Hydroxybenzene) and is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

STATE REGULATORY INFORMATION:
The following chemicals are specifically listed or otherwise regulated by individual states. For details on your regulatory requirements you should contact the appropriate agency in your state.

<table>
<thead>
<tr>
<th>COMPONENT NAME</th>
<th>CONCENTRATION</th>
<th>STATE CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetraethylenetetramine</td>
<td>&lt;15%</td>
<td>MA, NJ, PA</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td>&lt; 25%</td>
<td>MA, PA, NJ</td>
</tr>
<tr>
<td>Hydroxybenzene</td>
<td>&lt;4%</td>
<td>NJ, RI, PA, MA, IL</td>
</tr>
<tr>
<td>Diethylenetriamine</td>
<td>&lt;4%</td>
<td>RI, MA, NJ, PA</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

REASON FOR ISSUE: Changes in Section 2, 3, 5, 10, 14 and 15.

PREPARED BY: G. M. House

APPROVED BY: G. M. House

TITLE: Health, Safety & Environmental Manager

APPROVAL DATE: February 6, 2011

SUPERSEDES DATE: January 3, 2008

MSDS NUMBER: 277-11a

Note: The Hazardous Material Indexing System (HMIS), cited in the Emergency Overview of Section 3, uses the following index to assess hazard rating: 0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; and 4 = Severe.

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