1.) PRODUCT INFORMATION

Date        MARCH 1990
Trade Name        PERMA-PATCH (PART A)
Chemical Name and Synonyms
Chemical Family        Not Applicable
CAS Registry No.        See below for individual ingredients
EMERGENCY TELEPHONE        800-282-7769

2.) HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>HAZARDOUS COMPONENTS</th>
<th>CAS REG. NO.</th>
<th>OPT WT %</th>
<th>PEL/TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epichlophydrin &amp; Bisphenol A</td>
<td>025085-99-8</td>
<td>83</td>
<td>NA</td>
</tr>
<tr>
<td>Alkyl Glycidyl Ether</td>
<td>068609-97-2</td>
<td>17</td>
<td>NA</td>
</tr>
</tbody>
</table>

*NOTE: This product is subject to Selections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III)*

3.) PHYSICAL DATA

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>&gt;300°F</td>
</tr>
<tr>
<td>Specific Gravity (Water = 1)</td>
<td>1.11</td>
</tr>
<tr>
<td>Melting Point</td>
<td>NA</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>NA</td>
</tr>
<tr>
<td>Appearance and Odor</td>
<td>Clear, light yellow liquid - low viscosity - faint epoxy odor</td>
</tr>
</tbody>
</table>

4.) FIRE AND EXPLOSION HAZARD DATA

Flammable Limits.....NA
Extinguishing Media......Foam, C02, Dry Chemical
Special Fire Fighting Procedures......Wear positive pressure, self-contained breathing apparatus during fire fighting.
Unusual Fire and Explosion Hazards......None

5.) STABILITY

Stability......Stable
Conditions to Avoid......Excessive heating over long periods of time degrades resin. Freezing may cause a temporary haziness to develop. Fire conditions increase viscosity and Epoxide equivalent weight.
Incompatibility (materials to avoid)......Base (as opposed to acids).
Hazardous Decomposition or Byproducts......Under conditions of imperfect combustion and/or pyrolysis various phenolic compounds C0 and /or C02 may be evolved.

Hazardous Polymerization......Will Not Occur
Conditions to Avoid......Will not occur by itself, but masses of more than one pound of product plus an Aliphatic Amine will cause irreversible polymerization with considerable heat build up.
6.) HEALTH HAZARD DATA

Inhalation......No
Not likely to cause irritation
Skin......No
May cause allergic reaction, not likely to cause irritation.
Ingestion......Yes
Single dose oral toxicity is low (for rats >2000mg/kg), not likely to cause injury.
Eyes......No
May cause slight, temporary irritation.

Carcinogenicity......A poorly characterized sample of low molecular weight Diglycidyl Ether of Bisphenol A has been reported to produce skin cancer in a highly sensitive strain of mice. However, high levels of impurities (including a known animal skin carcinogen) compromise the validity of the findings. Diglycidyl Ether of Bisphenol A that is representative of current manufacturing processes is not believed to be a cancer hazard to humans. Results of mutagenicity tests on components have been negative in animals and negative in some in vitro tests and positive in others.

Medical Conditions Generally Aggravated by Exposure......Allergies

Emergency and First Aid Procedures:
Eyes......Irrigate with water for at least 15 minutes.
Skin......Wash off with water.
Ingestion......Induce vomiting. If large amounts are ingested, consult a physician.
Inhalation......Remove to fresh air. If effects occur, consult a physician.

7.) SAFE HANDLING AND USE

Material Released or Spilled......Soak up with absorbent or scrape up. Residue may be removed with hot, soapy water.

Waste Disposal Method......Burn in adequate incinerator or bury in approved landfill.

Storing and Handling......Keep from freezing.

8.) CONTROL MEASURES

Respiratory Protection......Respiratory equipment should not be necessary. If respiratory irritation is experienced, use an approved air-purifying respirator.

Ventilation......Local exhaust may be necessary.

Protective Gloves......Will depend on operation

Eye Protection......Safety glasses.

Other Protective Clothing or Equipment......Wear clean, long-sleeved, body covering clothing. Selection of specific items such as boots, gloves, apron, etc. will depend on operation.

Work Hygienic Practices......Avoid breathing vapors of heated material.

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MATERIAL SAFETY DATA

1.) PRODUCT INFORMATION

Date       MARCH 1990
Trade Name  PERMA-PATCH (PART B)
Chemical Name and Synonyms
Chemical Family  Not Applicable
CAS Registry No.  See below for individual ingredients

2.) HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>HAZARDOUS COMPONENTS</th>
<th>CAS REG. NO.</th>
<th>OPT WT %</th>
<th>PEL/TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetraethylenepentamine</td>
<td>112-57-2</td>
<td>-</td>
<td>NA</td>
</tr>
</tbody>
</table>

3.) PHYSICAL DATA

Boiling Point......Decomposes
Vapor Pressure (mm Hg)... NA
Vapor Density (Water = 1)......NA
Solubility in Water......None
Appearance and Odor......Amber liquid with amine odor
Specific Gravity (Water = 1).... 0.905
Melting Point......NA
Evaporation Rate......NA
(Butyl Acetate = 1)

4.) FIRE AND EXPLOSION HAZARD DATA

Flash Point (Mehtod Used).....>100*C
Extinguishing Media......Foam, Carbon Dioxide, Dry Chemical
Special Fire Fighting Procedures......Cool Containers exposed to flame with water. Wear full protective
gear and NIOSH/MSHA approved self-contained breathing apparatus.
Unusual Fire and Explosion Hazards......None

5.) STABILITY

Stability......Stable
Conditions to Avoid......None
Incompatibility (materials to avoid)......Strong oxidizers, acids.
Hazardous Decomposition or Byproducts......C0, C02, NOX as a result of thermal decomposition.

Hazardous Polymerization......Will Not Occur
Conditions to Avoid......None.
6.) HEALTH HAZARD DATA

Inhalation......Yes
Vapors may irritate nose and upper respiratory tract.
Skin......No
Prolonged and repeated contact may cause irritation; allergic reaction.
Ingestion......Yes
May cause gastrointestinal distress or irritation.
Eyes......Yes
Vapors may irritate; liquid may cause severe irritation with possible irreversible injury.

Carcinogenicity:
NTP......No IARC Monographs......No OSHA Regulated......No

Medical Conditions Generally Aggravated by Exposure......Allergic Conditions.

Emergency and First Aid Procedures:
Eyes......Flush with water, see physician if necessary.
Skin......Wash off with water.
Ingestion......Get immediate medical attention.
Inhalation......Remove to fresh air and contact a physician.

7.) SAFE HANDLING AND USE

Material Released or Spilled......Absorb with sand, earth or vermiculite. Collect into containers for disposal. Keep away from sewers and public water.

Waste Disposal Method......According to Federal, State and local authorities.

Storing and Handling......Store in cool, dry place away from heat and strong oxidizers. Do not roll drum.

Other Precautions......Emptied container retains product residue and vapors. Do not cut, drill, grind, or weld on or near this container.

8.) CONTROL MEASURES

Respiratory Protection......If working in a confined area or at elevated temperatures, an organic vapor canister type respirator is recommended.

Protective Gloves......Rubber or polyethylene

Eye Protection......Chemical splash proof goggles.

Other Protective Clothing or Equipment......Eye wash fountain and safety shower.

Work Hygienic Practices......Wash thoroughly after handling.

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MATERIAL SAFETY DATA

1.) PRODUCT INFORMATION

Date          MARCH 1990
Trade Name    PERMA-PATCH (SAND)
Chemical Name and Synonyms
Chemical Family Not Applicable
CAS Registry No. See below for individual ingredients

2.) HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>HAZARDOUS COMPONENTS</th>
<th>CAS REG. NO.</th>
<th>OSHA PEL</th>
<th>ACHIH TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicon Dioxide SiO2</td>
<td>14808-60-7</td>
<td>10 mg/m^3 8 hr TWA</td>
<td>0.1 mg/m^3 10 hr TWA</td>
</tr>
</tbody>
</table>

3.) PHYSICAL DATA

Boiling Point......4046°F
Vapor Pressure (mm Hg)......None
Vapor Density (Water = 1)......None
Solubility in Water......Insoluble
Appearance and Odor......White or tan sand, granular; odorless
Specific Gravity (Water = 1).... 2.65
Melting Point......3050°C
Evaporation Rate......None
(Butyl Acetate = 1)

4.) FIRE AND EXPLOSION HAZARD DATA

Flash Point (Mehtod Used)......None
Extinguishing Media......None required. Sand may be used as an extinguishing media.
Special Fire Fighting Procedures......NA
Unusual Fire and Explosion Hazards......NA

5.) STABILITY

Stability......Stable
Conditions to Avoid......None
Incompatibility (materials to avoid)......Contact with powerful oxidizing agents such as Flourine may cause fires.
Hazardous Decomposition or Byproducts......Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas (Silicon Tetrafluoride).

Hazardous Polymerization......Will Not Occur
Conditions to Avoid......None.
6.) HEALTH HAZARD DATA

Inhalation......Yes
Prolonged exposure to respirable Crystalline Quartz may cause delayed, chronic lung injury (Silicosis).
Skin......No
Not likely to cause irritation.
Ingestion......No.
Not likely to cause irritation.
Eyes......No
May cause slight, temporary irritation.

Carcinogenicity:
NTP......No  IARC Monographs......Yes  OSHA Regulated......No
IARC concludes that there is sufficient evidence for the carcinogenicity of Crystalline Silica to experimental animals, and that there is limited evidence of the Carcinogenicity to humans.

Medical Conditions Generally Aggravated by Exposure......Respiratory and pulmonary disorders.
Smoking aggravates the effects of exposure.

Emergency and First Aid Procedures:
Eyes......Irrigate with water.  If irritation persists, consult a physician.
Inhalation......For gross inhalation, remove to fresh air, give artificial respiration as needed and seek medical attention.

7.) SAFE HANDLING AND USE

Material Released or Spilled......Vacuum and place into closable container for disposal, or flush with water.  Do NOT dry sweep.

Waste Disposal Method......In accordance with Federal, State and local ordinances.

Storing and Handling......Avoid breakage and dusting.

8.) CONTROL MEASURES

Respiratory Protection......When particulate concentration is up to five times PEL, use any NIOSH or MSHA approved respirator.

Ventilation......Local exhaust.

Protective Gloves......Optional.

Eye Protection......Safety glasses.

Other Protective Clothing or Equipment......Optional.

Work Hygienic Practices......Avoid creating and breathing dust.

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