1 – Product and company identification

- Material identification: Ampreg 22 Standard Hardener
- Application of the substance/preparation: Epoxy curing agent
- Supplier/Manufacturer: Gurit (Canada) Inc
  175, rue Pélaudeau
  Magog, Québec, J1X 7L1 Canada
  Tel: +1 819 847-2182
- For transportation emergencies: Chemtrec (USA): 1-800-424-9300 or Canutec (Canada): 613-996-6666
- For additional information: Health, Safety and Environment department
  Email: christian.moreau@gurit.com

2 – Hazards identification

- Emergency overview: Corrosive liquid material.
- Hazardous status: This material is classified hazardous under OSHA 29 CFR 1910.1200 and under the Canadian Controlled Products Regulations.
- Warning statement:
  WARNING!
  CORROSIVE LIQUID.
  CAUSES EYE, SKIN AND UPPER RESPIRATORY TRACT BURNS.
  HARMFUL IN CONTACT WITH SKIN, IF SWALLOWED OR BY PROLONGED INHALATION EXPOSURE.
  MAY CAUSE SENSITIZATION BY SKIN CONTACT.

  Wear protective gloves and eye protection. Avoid contact with skin and clothing. Do not breathe vapor, use only with adequate ventilation. Do not ingest. Contains material which can cause lungs and kidney damages. Keep container tightly closed and sealed until ready for use. Wash thoroughly when appropriate.

- Potential acute health effects:
  Eyes: Corrosive to eyes. Causes burns.
  Skin: Caustic effect on skin and mucous membranes.
  Adverse effect on skin through absorption of the material.
  Sensitization possible by skin contact.
  Inhalation: May cause severe irritation to the respiratory system.
  Prolonged inhalation exposure may cause respiratory adverse effects.
  Ingestion: Corrosive and harmful if swallowed. May cause burns and damages to mouth, throat and stomach.

See toxicological information (section 11)
### 3 – Composition/ information on ingredients

- **Description:** Mixture of the substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-aminomethyl-3,5,5-trimethylcyclohexylamine</td>
<td>2855-13-2</td>
<td>30 – 60 %</td>
</tr>
<tr>
<td>Aminoethylpiperazine</td>
<td>140-31-8</td>
<td>10 – 30 %</td>
</tr>
<tr>
<td>Poly[oxy(methyl-1,2-ethanediyl)],[.alpha.-.(2-aminomethylethyl).[.omega.-.2-aminomethylethoxy)]-</td>
<td>9046-10-0</td>
<td>7 – 13 %</td>
</tr>
<tr>
<td>Nonyl phenol</td>
<td>25154-52-3</td>
<td>7 – 13 %</td>
</tr>
<tr>
<td>Formaldehyde polymer with Phenol and Teta</td>
<td>32610-77-8</td>
<td>3 – 7 %</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td>100-51-6</td>
<td>1 – 5 %</td>
</tr>
<tr>
<td>Triethylenetetramine</td>
<td>112-24-3</td>
<td>1 – 5 %</td>
</tr>
<tr>
<td>Phenol</td>
<td>108-95-2</td>
<td>1 – 5 %</td>
</tr>
<tr>
<td>Aminooylethanolamine</td>
<td>111-41-1</td>
<td>&lt; 0.2 %</td>
</tr>
<tr>
<td>Diethylene triamine</td>
<td>111-40-0</td>
<td>&lt; 0.2 %</td>
</tr>
</tbody>
</table>

### 4 – First aid measures

- **Eye contact:** Rinse immediately with plenty of water. Consult a doctor.
- **Skin contact:** Immediately wash with water and rinse thoroughly. Remove clothing soiled by the product.
- **Ingestion:** Do not induce vomiting. Rinse out mouth and drink plenty of water. Call for medical help.
- **Inhalation:** Remove individual to fresh air. Consult a doctor if symptoms persist.

### 5 – Fire-fighting measures

- **Suitable extinguishing media:** Water haze, foam, fire-extinguishing powder, carbon dioxide.
- **Not suitable extinguishing media:** Water with full jet.
- **Special exposure hazards:** Formation of toxic gases will occur during over heating or in case of fire.
- **Protective equipment:** Wear fully protective suit with self contained breathing apparatus (SCBA) with a face-piece operated in positive pressure mode.

### 6 – Accidental release measures

- **Personal precautions:** Wear protective equipment to avoid contact with eyes and skin.
- **Environmental precautions:** Contain spillage and prevent material from entering waterways, sewers, surface or ground water.
- **Measures for cleaning up:** Absorb with liquid-bending material. Collect contaminated material in a container and properly dispose of waste.
7 – Handling and storage

- **Handling:** Wear appropriate personal protection when handling. Workers should follow good hygiene measures. Ensure good ventilation/exhaustion at the workplace. Use a suitable respiratory protective device in case of insufficient ventilation. Empty containers retain product residue and can be hazardous. Do not reuse container.

- **Storage:** Store in a dry, cool and well ventilated area. Keep containers tightly sealed. Keep away from heat, open flame or any other source of ignition. Protect material from direct sunlight and incompatible products.

8 – Exposure controls and personal protection

- **Workplace exposure limits:**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>CAS#</th>
<th>OSHA (PEL)</th>
<th>ACGIH (TLV)</th>
<th>AIHA WEEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>108-95-2</td>
<td>5 ppm (TWA)</td>
<td>5 ppm (TWA)</td>
<td>-</td>
</tr>
<tr>
<td>Triethylenetetramine</td>
<td>112-24-3</td>
<td>-</td>
<td>-</td>
<td>1 ppm (TWA)</td>
</tr>
</tbody>
</table>

Note: This product mixture have no established monitoring exposure limits.

- **Engineering measures:** Use material only with adequate ventilation/exhaustion.

- **General measures:** Keep product away from food and beverages. Wash hands before eating and whenever appropriate. Immediately remove all soiled and contaminated clothing. Avoid contact with eyes and skin.

- **Personal protection equipments:**
  - Eyes: Wear safety glasses and face shield
  - Skin: Wear gloves, apron and protective work clothes
  - Respiratory: Not needed if ventilation is adequate. Wear an approved respirator with organic vapour cartridge if insufficient ventilation is provided.

- **Suitable gloves:** Nitrile rubber (NBR). Selection of gloves should take in consideration the quality aspect (thickness, strength, etc.) which varies from manufacturer to manufacturer.
9 – Physical and chemical properties

- **Physical state:** Liquid
- **Color:** Yellow-brown
- **Odor:** Amine-like
- **Flash point:** 118 °C (244 °F) Pensky Martin Closed Cup
- **Melting point:** Not available
- **Boiling point:** 220 °C (428 °F)
- **Auto-ignition temperature:** Product is not self-igniting
- **Ignition temperature:** 240 °C (464 °F)
- **Vapor pressure (20 °C (68 °F):** 0.01 kPa (0.08 mm Hg)
- **Density (20 °C (68 °F):** 0.94 g/cm³
- **Solubility in water:** Fully miscible

10 – Stability and reactivity

- **Stability and reactivity:** This product is stable under normal condition.
- **Conditions to avoid:** Do not overheat to avoid thermal decomposition.
- **Dangerous reaction:** No dangerous reactions known.
- **Incompatibility with other substances:** Acids and strong oxidizers. Mixing with epoxy resin under uncontrolled conditions may produce considerable heat.
- **Hazardous decomposition products:** Decomposition products include but are not limited to: Carbon monoxide, Carbon dioxide and toxic pyrolysis products.

11 – Toxicological information

<table>
<thead>
<tr>
<th>Substance</th>
<th>DL50 (Oral rat)</th>
<th>DL50 (Dermal rabbit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-aminomethyl-3,5,5-trimethylcyclohexylamine</td>
<td>1030 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Aminoethyipiperazine</td>
<td>2110 mg/kg</td>
<td>865 mg/kg</td>
</tr>
<tr>
<td>Poly[oxy(methyl-1,2-ethanediyl)]-alpha-(2-aminomethylthyl)-omega-(2-aminomethylethoxy)-</td>
<td>2880 mg/kg</td>
<td>2980 mg/kg</td>
</tr>
<tr>
<td>Nonyl phenol</td>
<td>580 mg/kg</td>
<td>2140 mg/kg</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td>1230 mg/kg</td>
<td>2000 mg/kg</td>
</tr>
<tr>
<td>Triethylenenetetramine</td>
<td>&gt;2000 mg/kg</td>
<td>805 mg/kg</td>
</tr>
<tr>
<td>Phenol</td>
<td>317 mg/kg</td>
<td>630 mg/kg</td>
</tr>
<tr>
<td>Aminoethylethanolamine</td>
<td>3000 mg/kg</td>
<td>&gt;2000 mg/kg</td>
</tr>
<tr>
<td>Diethylenetriamine</td>
<td>1750 mg/kg</td>
<td>860 mg/kg</td>
</tr>
</tbody>
</table>
11 – Toxicological information (continued)

- **Acute effects:** Eyes: Corrosive to eyes. Causes burns.
  Skin: Caustic effect on skin and mucous membranes.
  Adverse effect on skin through absorption of the material.
  Sensitization possible by skin contact.
  Inhalation: May cause severe irritation to the respiratory system.
  Prolonged inhalation exposure may cause respiratory adverse effects.
  Ingestion: Corrosive and harmful if swallowed. May cause burns and damages to mouth, throat and stomach.

- **Mutagenic effects:** Not available
- **Teratogenic effects:** Not available
- **Carcinogenic effects:** Not classified or listed as carcinogenic by ACGIH, OSHA, IARC and NTP.

12 – Ecological information

- **General notes:** Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
  Prevent material to reach surface or ground water or sewage system.

- **Ecotoxicity data:** Not available
- **Persistence and biodegradability:** Not available
- **Mobility:** Not available

13 – Disposal consideration

- **Waste disposal:** Disposal must comply with applicable Federal, State and local regulations. Waste generator should review local appropriate regulations that may vary from one location to another.

- **Remarks:** Avoid dispersal of wasted material to come in contact with soil, runoff water and drains.

14 – Transport information

<table>
<thead>
<tr>
<th>Type</th>
<th>UN</th>
<th>Proper shipping name</th>
<th>Class</th>
<th>PG</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road (DOT/TDG)</td>
<td>UN2735</td>
<td>Polyamines, Liquid, Corrosive, N.O.S. (Isophorondiamine, N-Aminoethylpiperazine)</td>
<td>8</td>
<td>II</td>
<td>May use the limited quantity exemption.</td>
</tr>
<tr>
<td>Maritime (IMDG)</td>
<td>UN2735</td>
<td>Polyamines, Liquid, Corrosive, N.O.S. (Isophorondiamine, N-Aminoethylpiperazine)</td>
<td>8</td>
<td>II</td>
<td>May use the limited quantity exemption. If not, identify as Marine pollutant “Nonyl Phenol”.</td>
</tr>
<tr>
<td>Air (IATA)</td>
<td>UN2735</td>
<td>Polyamines, Liquid, Corrosive, N.O.S. (Isophorondiamine, N-Aminoethylpiperazine)</td>
<td>8</td>
<td>II</td>
<td>-</td>
</tr>
</tbody>
</table>
Material Safety Data Sheet

15 – Regulatory information

- **U.S. Federal regulations:**
  - TSCA: All components listed.
  - SARA 302/304: Phenol: TPQ = 500/10,000 pounds; RQ = 1000 pounds
  - SARA 311/312: Acute effects, chronic effects.
  - SARA 313: This material contains Phenol which may be subject to reporting.
  - Clean Air Act: Phenol is listed as a hazardous air pollutant.
  - Clean Water Act: Phenol is listed as a Priority and Toxic Pollutant.

- **U.S. State regulations:**
  - Massachusetts RTK: Aminoethylpiperazine, Nonyl phenol, Benzyl alcohol, Triethylenetetramine, Phenol
  - New Jersey RTK: 3-aminomethyl-3,5,5-trimethylcyclohexylamine, Aminoethylpiperazine, Triethylenetetramine, Phenol
  - Pennsylvania RTK: Aminoethylpiperazine, Nonyl phenol, Benzyl alcohol, Triethylenetetramine, Phenol
  - California Proposition 65: None of the ingredients listed.

<table>
<thead>
<tr>
<th>HMIS-rating</th>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH</td>
<td>* 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FLAMMABILITY</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYSICAL HAZARDS</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Canadian regulations:**
  - DSL: All components listed.
  - WHMIS classification:
    - Class D-1B: Materials causing other toxic effects (very toxic);
    - Class D-2B: Materials causing other toxic effects (toxic);
    - Class E: Corrosive materials

- **International inventory lists:**
  - The ingredients of this product are listed or exempted in Europe (EINECS), Korea (ECL), China (IECSC), Australia (AICS), New Zealand (NZIoC) and Philippines (PICCS).

16 – Other information

- **References:**
  - ANSI Z400.1, MSDS Standard, 2004;
  - Controlled products regulations (DORS/88-66) Canada.

- **Notice to the reader:**
  - To the best of our knowledge, the information contained herein is accurate at the date of its publication. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. The data relates only to the specific product designated and does not relate to use of the product in any process or in combination with any other material.