MATERIAL SAFETY DATA SHEET

Date Prepared: 10-24-2003

Section 1 – Product and Supplier Identification

Product Name: Nickel Oxidizer
Synonyms: Antiquing solution

Section 2 – Hazardous Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>%</th>
<th>CAS</th>
<th>TLV</th>
<th>PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper Sulfate</td>
<td>&lt;7</td>
<td>7758-99-8</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td>Selenium Acid</td>
<td>&lt;3</td>
<td>7783-00-8</td>
<td>0.2 mg/m³ (Se)</td>
<td>0.2 mg/m³ (Se)</td>
</tr>
<tr>
<td>Nitric Acid</td>
<td>&lt;3</td>
<td>7697-37-2</td>
<td>2 ppm</td>
<td>2 ppm</td>
</tr>
</tbody>
</table>

Section 3 – Physical Properties

- Vapor pressure (mm Hg): n/a
- Vapor Density (air = 1): n/a
- Evaporation Rate (butyl acetate = 1): n/a
- % Volatiles: n/a
- Appearance: clear, light blue liquid
- Odor: none
- Specific Gravity: 1.04
- Boiling Point: 212 F
- Melting/Freezing point: n/a
- Solubility in Water: complete
- pH: 1.5

Section 4 – Fire and Explosion Data

- Flash Point (F): Does not burn
- Autoignition Temperature (F): n/a
- Flammability Limits in Air (%): Upper (UEL): n/a
- Lower (LEL): n/a
- Extinguishing Media: Select media to fight surrounding fire.
- Special Firefighting Procedures: None
- Unusual Fire or Explosion Hazards: Contact with some metals will generate hydrogen gas.

Section 5 – Reactivity Data

- Stability: Stable
- Hazardous Polymerization: Will not occur
- Conditions to Avoid: Contact with incompatibles
- Incompatible Materials: Cyanides, strong reducers, zinc, aluminum, magnesium.
- Hazardous Byproducts of Decomposition: Toxic hydrogen selenide fumes if contacted with reducers. Contact with some metals will generate hydrogen gas.
### Section 6 – Health Hazard Data

<table>
<thead>
<tr>
<th>Routes of Entry:</th>
<th>Inhalation?</th>
<th>y</th>
<th>Skin?</th>
<th>y</th>
<th>Ingestion?</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute:</td>
<td>Ingestion: irritation to gastrointestinal tissues. Also, nausea, vomiting, abdominal pain, difficulty breathing. Toxic fumes are not usually generated by this product. Inhalation of mist (if sprayed) may irritate respiratory passages and cause headache, dizziness, nausea and difficulty breathing.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Chronic:</td>
<td>Skin sensitization in some individuals.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Carcinogenicity:</td>
<td>Selenium Compounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NTP?</td>
<td>R (reasonably anticipated to be a human carcinogen)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IARC monographs?</td>
<td>3 (unclassifiable as to carcinogenicity in humans)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSHA regulated?</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical Conditions Aggravated by Exposure:</td>
<td>none</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Section 7 – First Aid Procedures

- **Eye Contact:** Immediately flush with water for 15 minutes. Seek medical attention.
- **Skin Contact:** Wash with soap and water. Remove contaminated clothing. If exposure is severe, seek medical attention.
- **Inhalation:** Remove victim to fresh air. Restore breathing if necessary. If breathing is difficult give oxygen. Seek medical attention.
- **Ingestion:** Induce vomiting. Seek medical attention immediately. If conscious, give two or three glasses of water or milk, then follow with milk of magnesia, beaten eggs or vegetable oil.

### Section 8 – Precautions for Safe Handling and Use

*In Case of Spill or Leak:* Absorb onto chemical absorbent and sweep into suitable container for disposal. Do not allow spilled product into sewer or surface waters.

- **Waste Disposal:** State and Federal regulations apply. Contact a hazardous waste disposal company.
- **Handling:** Wear appropriate protective equipment. Good local ventilation or fume hood is preferred. Wash hands after handling product.
- **Storage:** Store in a cool dry place away from incompatibilities. Keep container sealed when not in use.

### Section 9 – Personal Protection Information

- ** Respiratory:** Fume hood or NIOSH approved respirator if airborne concentrations exceed TLV or are unknown.
- **Eye/Face:** Chemical safety goggles
- **Hands/Body:** Neoprene or rubber gloves and apron
- **Other:** Emergency eyewash station and safety shower

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