Section I - Product Identification

An aqueous solution of phenol.

Section II - Hazards Identification

Warning. Harmful if swallowed. Wash thoroughly after handling. Do not eat drink or smoke while using this product. If swallowed, rinse mouth with water and call a poison center. Phenol is absorbed through intact skin and is highly toxic by ingestion, inhalation or contact.

Safety Ratings

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous</td>
<td>None</td>
<td>None</td>
<td>Slight</td>
</tr>
</tbody>
</table>

Recommended safety equipment: safety goggles, lab coat and proper gloves.

Storage: Room Temperature.

NFPA Ratings

Health = 2  Flammability = 0  Reactivity = 0

Potential Health Effects

The toxicology of this compound have not been completely examined. It is presumed that the toxicity of this item is similar to other solutions of phenolics.

Inhalation: Phenol is absorbed through the mucous membranes and will produce irritation as well as the same effects as ingestion.

Ingestion: Ingestion can produce CNS disturbance, dizziness, headache, stupor, coma and death. Phenol is toxic.

Skin contact: Contact with phenol can cause chemical burns.

Eye contact: Can cause eye damage.

Chronic Exposure: Unknown

Aggravation of preexisting conditions: Unknown

Section III - Composition/Information on Components

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS#</th>
<th>OSHA Pel</th>
<th>ACGIH TLV</th>
<th>Other Limits</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>108-95-2</td>
<td>5 ppm (Skin) TWA</td>
<td>5 ppm (Skin) TWA</td>
<td></td>
<td>5% w/v</td>
</tr>
</tbody>
</table>

Section IV - First Aid Measures

Inhalation: Remove from source of exposure and get medical attention for any breathing difficulty.

Ingestion: Never give anything by mouth to a unconscious person. If the victim is conscious administer about 1 oz of castor oil or vegetable oil. Get immediate medical attention even if symptoms improve.

Skin Contact: In case of skin contact, remove contaminated clothing and flush with water. Wash affected area with soap and water. Get medical advice.

Eye Contact: In case of eye contact, flush with water for at least 15 minutes and get immediate medical attention.
Section V - Fire Fighting Measures

Flash point: Not applicable.
Flammable Limits: Not applicable.
Explosion: Not normally an explosion hazard.
Fire Extinguishing Media: Alcohol type foam, carbon dioxide or dry chemical.
Special information: Pyrolysis will release phenol and toxic oxides such as carbon monoxide.

Section VI - Accidental Release Measures
Remove all sources of ignition, absorb with a suitable absorbent (such as paper towels) and dispose.

Section VII - Handling and Storage
Store in a closed container at controlled room temperature.

Section VIII - Exposure Control/Personal Protection

Airborne Exposure Limits: See section III.
Ventilation System: Usually not required. When required, Refer to the ACGIH document, “Industrial Ventilation, a Manual of Recommended Practices” for details about ventilation.
Personal Respirator: Usually not required. In case of emergency, or when exposure levels are unknown, use a positive pressure, full face piece, air supplied respirator.
Skin protection: Protective gloves are recommended as part of good laboratory practice.
Eye Protection: Laboratory safety goggles or similar products are recommended as part of good laboratory practice.

Section IX - Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>100°C</td>
</tr>
<tr>
<td>Density</td>
<td>1.05 g/ml</td>
</tr>
<tr>
<td>Vapor pressure (mm Hg)</td>
<td>Unknown</td>
</tr>
<tr>
<td>Evaporation Rate (Water = 1)</td>
<td>1</td>
</tr>
<tr>
<td>Vapor Density (air = 1)</td>
<td>3.2</td>
</tr>
<tr>
<td>Solubility</td>
<td>Phenol is soluble in water to about 6%</td>
</tr>
<tr>
<td>Appearance and Odor</td>
<td>A clear solution with the characteristic odor of phenol.</td>
</tr>
</tbody>
</table>

Section X - Stability and Reactivity

Stability: Freezes at very low temperature.
Hazardous Decomposition Products: Nothing unusual.
Hazardous polymerization: Will not occur.
Incompatibilities: Oxidizers.
Conditions to avoid: heat, flame and sources of ignition.

Section XI - Toxicological Information

Phenol is toxic by ingestion, inhalation and absorption.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Known Carcinogenicity?</th>
<th>NTP?</th>
<th>Anticipated?</th>
<th>IARC Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>3</td>
</tr>
</tbody>
</table>

Section XII - Ecological Information

Environmental Fate: Biodegradable.
Environmental Toxicity: Unknown, but expected to be toxic to aquatic organisms.

Section XIII - Disposal Considerations

Incineration is the preferred disposal method. Local governments may restrict the amount of phenol that may be flushed down drain. Dispose of contents and container in accordance with all government regulations.
Section XIV - Transportation Information
Not regulated.

Section XV - Regulatory Information

Chemical Inventory Status

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>TSCA</th>
<th>EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Federal, State and International Regulations

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>SARA 302</th>
<th>SARA 313</th>
<th>RCRA</th>
<th>TSCA</th>
<th>Category</th>
<th>261.33</th>
<th>8(D)</th>
<th>Ca. Prop 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>RQ: 1000</td>
<td>TPQ: 500</td>
<td>Yes</td>
<td>No</td>
<td>U188</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

Chemical Weapons Convention: No  TSCA 12(b): No  CDTA: Yes
SARA 311/312: Acute: Yes, Chronic: Yes, Flammable: No

Section XVI - Other Information
This information is believed to be correct but is not warranted as such, nor does it purport to be all inclusive.

Revision Date: May 5, 2015