**SECTION I NAME**  
Phenol, Crystals

**SECTION II INGREDIENTS OF MIXTURES**

Principal Component(s) % TLV Units
Phenol, crystals 100% See Section V.

DANGER! CORROSIVE! POISON! MAY BE FATAL IF

SWALLOWED OR ABSORBED THROUGH SKIN. CAUSES SEVERE

**SECTION III PHYSICAL DATA**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting Point (°F)</td>
<td>Congeals at 41°C; MP 43°C</td>
</tr>
<tr>
<td>Boiling Point (°F)</td>
<td>181°C (358°F)</td>
</tr>
<tr>
<td>Vapor Pressure (mm Hg)</td>
<td>~ 10.3 at 71°C</td>
</tr>
<tr>
<td>Vapor Density (Air=1)</td>
<td>3.24</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>6.7 grams per 100 mL water at 16°C</td>
</tr>
<tr>
<td>Color &amp; Odor</td>
<td>Colorless to light pink solid, darkens on exposure to light; characteristic odor.</td>
</tr>
</tbody>
</table>

**SECTION IV FIRE AND EXPLOSION HAZARD DATA**

- **Flash Point (Method Used):** 175°F (79°C) (cc)
- **Flammable Limits in Air (% by Volume):**
  - Lower Phenol 1.5
  - Upper Phenol 8.6
- **Specific Gravity (H₂O = 1): 1.071 @ 25/4°C**
- **Evaporation Rate (% by Volume):** Less than 0.03

**EXTINGUISHER MEDIA:** Use water spray; carbon dioxide (CO₂); dry chemical (ABC); foam.

**SPECIAL FIREFIGHTING PROCEDURES:**

In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective clothing including eye protection. Avoid skin and eye contact; extremely corrosive to all body tissue. Avoid splashing personnel with phenol. Water containing phenol can cause severe chemical burns.

(2004 EMERGENCY RESPONSE GUIDEBOOK, RSPA P 5800.9, GUIDE PAGE NO. 153)

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

Yields flammable vapors when heated, which will form explosive mixtures with air. Phenol discolors above 50°C. Vapors are flammable and toxic.

Ignition Temperature: 1319°F (715°C).

**SECTION V HEALTH HAZARD DATA**

**Threshold Limited Value**  
Toxicity: oral-rat LD50: 317 mg/kg. (Skin Values) TWA 5 ppm (ACGIH 2001).

**Effects of Overexposure**  
**INGESTION:** In animals, prolonged inhalation of vapors (30-60 ppm) has induced respiratory distress, lung damage, loss of weight and paralysis. Breathing of phenol vapors can cause irritation of the mucous membranes. Ingestion of phenol causes intense burning of mouth and throat followed by marked abdominal pain and distention. Lethal oral doses of phenol for adults have ranged from 1 to 10 g. for infants 50 to 200 mg. Cirrhosis, muscular weakness and collapse may occur within a few minutes after ingestion. Tremors and convulsions are occasionally observed. **SKIN:** Phenol is rapidly absorbed through the skin. A person discoloring through skin absorption may occur if the chemical is not removed promptly and thoroughly. If the phenol is left on the skin the exposed area will burn. **EYES:** Exerts a strong corrosive action. May cause corneal damage or blindness. Target organs: Central nervous system, kidneys, liver.

**Emergency and First Aid Procedures**

**INGESTION:** Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person. **EYES:** Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention. **SKIN:** Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention. **INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**SECTION VI REACTIVITY DATA**

- **Stability:** Unstable
- **Conditions to Avoid:** Excessive temperatures and heat.
- **Incompatibility:** Materials to Avoid
  - Avoid contact with strong oxidizers, halogens and calcium hypochlorite. Hot phenol attacks aluminum, lead, magnesium and zinc and the phenol is discolorated. The discoloration of phenol is catalyzed by iron and copper.

**SECTION VII SPILL OR LEAK PROCEDURES**

Steps to be taken in case material is released or spilled

- Allow only trained and protected personnel in area. Wearing proper protective equipment and with good ventilation, remove all sources of ignition. Scoop up or if liquid, absorb in sand, earth, sawdust, vermiculite. Place in steel containers. Wash spill area well with soap and water.

**Waste Disposal Method**

Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only. Dispose of in an approved incinerator or contract with a licensed waste disposal service.

**SECTION VIII SPECIAL PROTECTION INFORMATION**

**Respiration Protection (Specify Type):** Use in a well-ventilated area. Work in fume hood. If necessary use a NIOSH/MSHA-approved special cartridge respirator. **Ventilation:**

- **Local Exhaust:** Recommended.  
- **Mechanical (General):** Recommended.  
- **Other:**

**Protective Gloves:** Neoprene.  
**Eye Protection:** Splash proof goggles.

**Other Protective Equipment:** Smock, apron, eye wash station, ventilation hood, proper gloves, fire extinguisher. Face shields may be worn in addition to safety goggles.

**SECTION IX SPECIAL PRECAUTIONS**

See Section V above. Do not handle with bare hands. Store in a cool, dry, well-ventilated place away from fire hazards and protect from light. Wash thoroughly after handling.

**Other Precautions:**

- Distill only under inert atmosphere. Threshold (Odor) is 0.3 ppm. White crystalline mass turns pink or red if not perfectly pure. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing and equipment before reuse.

**Revision No. 7**

**Date:** 01/01/07  
Approved by: James A. Bertsch  
Chemical Safety Coordinator

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