

## Material Safety Data Sheet

According to ISO 11014-1

Page 1 of 6

### 1. IDENTIFICATION OF SUBSTANCE

**Name:** PHENOL 5% IN ANHYDROUS GLYCERIN

**Manufacturer:** Department of Pharmacy  
Duke University Medical Center  
Box 3089  
Durham, NC 27710  
919-684-5125

**Information Department:** Occupational and Environmental Safety Office  
Duke University Medical Center  
Box 3914  
Durham, NC 27710  
919-684-5996

**Emergency Information:** Regional Poison Control Center  
800-848-6946

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

**Chemical Characterization/Description:** Phenol and glycerin solution

**Synonym(s):** Phenol: carboic acid, phenyl alcohol, benzenol;  
Glycerin: glycerol, glycerine, trihydroxypropane

**Dangerous Components (CAS#, Hazardous Chemical, Percent):**

108-95-2	Phenol	5%
56-81-5	Glycerin	95%

### 3. HAZARDS IDENTIFICATION

**Hazard Description:**

Phenol may be fatal by ingestion, inhalation, or skin absorption. It rapidly penetrates the skin and is corrosive to the skin and eyes. Phenol is a severe irritant of the nose, throat and respiratory tract. Glycerin is a poison by subcutaneous route and mildly toxic by ingestion. It is a skin and eye irritant. In the form of a mist, glycerin is a nuisance particulate and inhalation irritant. Glycerin is combustible. (Hazard description based on concentrated constituents; this product is compounded mixture.)

**NFPA Ratings (scale 0-4):**

Health 3

Fire: 1

Reactivity: 0

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**4. FIRST AID MEASURES**

**Inhalation:**

Remove victim to fresh air. Encourage victim to take deep breaths of fresh air. If the victim has difficulty breathing, administer oxygen; perform rescue breathing if necessary. IT MAY BE DANGEROUS TO THE PERSON PROVIDING AID TO GIVE RESCUE BREATHING WHEN THE INHALED MATERIAL IS TOXIC/CORROSIVE. IMMEDIATELY call a hospital or poison control center and prepare to transport victim to a hospital. Ensure rescue personnel wear appropriate personal protective equipment.

**Skin Contact:**

IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Ensure rescue personnel are protected from exposure by wearing appropriate personal protective equipment. Gently wash all affected skin areas thoroughly with soap and water. Be particularly careful to clean folds, creases, and groin area. Seek medical attention immediately even if no symptoms such as redness or irritation appear.

**Eye Contact:**

First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

**Ingestion:**

DO NOT INDUCE VOMITING. Phenols are corrosive and irritating; induction of vomiting may worsen the medical condition of the victim.

IMMEDIATELY call a hospital or poison control center and prepare to transport the victim to a hospital. Locate activated charcoal or milk in case the medical advisor recommends administration.

If medical advice is not immediately available and the victim is conscious and not convulsing, give the victim a glass of activated charcoal slurry in water or a glass of milk or water.

If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open, and lay the victim on his/her side with the head lower than the body. Transport the victim IMMEDIATELY to a hospital.

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**5. FIRE-FIGHTING MEASURES**

**Suitable Extinguishing Agents:**

Use alcohol foam, CO<sub>2</sub>, or dry chemical to fight fire. Consider appropriate extinguishing media for surrounding fire. Product is combustible when heated.

**Protective Equipment:**

Self-contained breathing apparatus and protective equipment for fire fighting.

**6. ACCIDENTAL RELEASE MEASURES**

**Personnel Precautions:**

Wear gloves (neoprene) and eye protection (chemical splash goggles).

**Environmental Precautions:**

None necessary under normal conditions of use.

**Measures for Cleaning/Collection:**

Use absorbent paper to pick up all liquid spill material. Seal the absorbent paper, as well as contaminated clothing, in a vapor-tight plastic bag for eventual disposal. Wash all contaminated surfaces with a soap and water solution.

**7. HANDLING AND STORAGE**

**Handling:**

Wear PPE when handling this material. Additional protective clothing (e.g., Tyvek sleeves) should be worn depending on potential exposure to product. Wash hands after handling.

**Storage:**

Store in a cool, dry, well-ventilated location. Protect this product from light.

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**8. EXPOSURE CONTROLS AND PERSONAL PROTECTION**

**Engineering Controls:**

None necessary under conditions of normal use.

**Control Parameters:**

<u>Chemical</u>	<u>Limit</u>	<u>Reference</u>
Phenol	5 ppm (skin)	ACGIH TLV-TWA
Glycerin	10 ppm	ACGIH TLV-TWA (mist)

**Personal Protective Equipment:**

**Respiratory Protection**

None necessary under conditions of normal use.

**Skin Protection**

Wear gloves (neoprene) when using this chemical. If this chemical comes into contact with your gloves, or if a tear/puncture develops, remove gloves at once and wash hands. Additional protective clothing (e.g., Tyvek sleeves) should be worn depending on potential exposure to product.

**Eye Protection**

Splash-proof safety goggles must be worn while handling this chemical.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State:</b> Viscous liquid	<b>Color and Odor:</b> Colorless to pale yellow; odorless. Sweet and warm taste (glycerin).
<b>pH:</b> N/A	<b>Melting Point (° C):</b> 17.8 (glycerin)
<b>Flashpoint (° C):</b> 160 (glycerin)	<b>Boiling Point (° C):</b> 290 (glycerin)
<b>Explosion Properties:</b> N/A	<b>Autoignition Temperature (° C):</b> 370 (glycerin)
<b>Vapor Pressure (mm Hg/50°C):</b> 0.0025 (glycerin)	<b>Vapor Density (air = 1):</b> 3.17 (glycerin)
<b>Specific Gravity (water = 1):</b> 1.26 (glycerin)	<b>Odor Threshold:</b> 0.016 ppm (phenol)
<b>Solubility:</b> Soluble in water.	

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**10. STABILITY AND REACTIVITY**

**General:** This product is considered hygroscopic.

**Materials to Avoid:** Phenol is incompatible with strong oxidizers, calcium hypochlorite, butadiene, nitrobenzene; explosive reactions can occur with formaldehyde, peroxidisulfuric acid, perosomonosulfuric acid, aluminum chloride, and sodium nitrate. When hot, phenol attacks aluminum, magnesium, lead, and zinc metals. Some forms of plastic and rubber are attacked by phenol. Glycerin is incompatible with strong oxidizers; mixtures with hydrogen peroxide are highly explosive. This product is combustible; avoid open flames and heat.

**Hazardous Decomposition Products:** When heated to decomposition, product may emit acrid smoke and irritating fumes.

**11. TOXICOLOGICAL INFORMATION**

**Acute Toxicity:** Phenol may be fatal by ingestion (15 grams has caused death), inhalation, or skin absorption. It rapidly penetrates the skin. Absorption of phenolic solutions through the skin may be very rapid and can cause death within 30 minutes by exposure of as little as 64 square inches of skin. It is corrosive to the skin and eyes. Phenol is a severe irritant of the nose, throat and respiratory tract. The oral LD<sub>50</sub> for phenol is 270 mg/kg (mouse) and the dermal LD<sub>50</sub> is 669 mg/kg (rat). Glycerin is a poison by subcutaneous route, is mildly toxic by ingestion, and is a skin and eye irritant. It may be readily absorbed through the skin. In the form of a mist, glycerin is a nuisance particulate and inhalation irritant. The oral LD<sub>50</sub> for glycerin is 4090 mg/kg (mouse); the subcutaneous LD<sub>50</sub> is 91 mg/kg (mouse).

**Signs/Symptoms of Overexposure:** Exposure to phenol can cause irritation of the eyes, nose and throat; anorexia and weight loss; muscular weakness, ache, and pain; darkened urine; cyanosis; liver and kidney damage; skin burns; dermatitis; tremor, convulsions and twitching. Exposure to glycerin can cause systemic effects such as headache, nausea, vomiting, and irritation of the skin, eyes, and respiratory tract.

**Chronic Toxicity:** This product is not considered a carcinogen by NTP, IARC or OSHA. Phenol is an experimental carcinogen and neoplastigen. Experimental reproductive effects have been reported for glycerin.

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<b>12. ECOLOGICAL EFFECTS</b>	
None anticipated under normal conditions of use.	
<b>13. DISPOSAL CONSIDERATIONS</b>	
Dispose of all waste and contaminated materials associated with this chemical as specified by existing local, state and federal regulations concerning hazardous waste disposal. Contact the Occupational and Environmental Safety Office for specific guidance.	
<b>14. TRANSPORT INFORMATION</b>	
<b>Proper shipping name (DOT):</b> Phenol solutions	
<b>UN/ID number:</b> UN2821	<b>Hazard class:</b> 6.1
<b>Packing group:</b> II	<b>Labels required:</b> Poison
<b>15. REGULATORY INFORMATION</b>	
Phenol is listed by CERCLA, SARA 312 and 313, and TSCA. Glycerin is reported in the EPA TSCA Inventory.	
<b>16. OTHER INFORMATION</b>	
This information is based on our present knowledge; however this shall not constitute a guarantee for any specific product features. No toxicity data are available on this specific formulation; this health hazard assessment is based on information that is available for its components.	