



# Material Safety Data Sheet

<b>NFPA</b>  	<b>HMIS</b>  <table border="1" style="margin: auto;"> <tr><td style="background-color: #00FFFF;">Health Hazard</td><td style="text-align: center; border: 1px solid black;">3</td></tr> <tr><td style="background-color: #FFC0CB;">Fire Hazard</td><td style="text-align: center; border: 1px solid black;">2</td></tr> <tr><td style="background-color: #FFFF00;">Reactivity</td><td style="text-align: center; border: 1px solid black;">0</td></tr> </table>	Health Hazard	3	Fire Hazard	2	Reactivity	0	<b>Personal Protective Equipment</b>    See Section 15.
Health Hazard	3							
Fire Hazard	2							
Reactivity	0							

Section 1. Chemical Product and Company Identification		Page Number: 1
<b>Common Name/ Trade Name</b>	<b>Phenol, Liquefied, Neutralized, for Molecular Biology</b>	<b>Catalog Number(s).</b> P1067
<b>Manufacturer</b>	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	<b>CAS#</b> Mixture.
<b>Commercial Name(s)</b>	Not available.	<b>RTECS</b> Not applicable.
<b>Synonym</b>	Carbolic Acid, Liquefied	<b>TSCA</b> TSCA 8(b) inventory: Phenol; Water; Tromethamine
<b>Chemical Name</b>	Carbolic Acid, liquefied	<b>CI#</b> Not available.
<b>Chemical Family</b>	Not available.	<b>IN CASE OF EMERGENCY</b> <a href="tel:800-424-9300">CHEMTREC (24hr) 800-424-9300</a>  CALL (310) 516-8000
<b>Chemical Formula</b>	Not applicable.	
<b>Supplier</b>	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	

Section 2. Composition and Information on Ingredients					
Name	CAS #	Exposure Limits			% by Weight
		TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )	CEIL (mg/m <sup>3</sup> )	
1) Phenol	108-95-2	5			85-100
2) Water	7732-18-5				0-15
3) Tromethamine	77-86-1				<1
<b>Toxicological Data on Ingredients</b>	<b>Phenol:</b> ORAL (LD50): Acute: 317 mg/kg [Rat]. 270 mg/kg [Mouse]. DERMAL (LD50): Acute: 630 mg/kg [Rabbit]. 669 mg/kg [Rat]. <b>Tromethamine:</b> ORAL (LD50): Acute: 5900 mg/kg [Rat].				

Section 3. Hazards Identification	
<b>Potential Acute Health Effects</b>	Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, . Hazardous in case of skin contact (corrosive, sensitizer, permeator). Slightly hazardous in case of eye contact (corrosive). Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

<b>Potential Chronic Health Effects</b>	<p><b>CARCINOGENIC EFFECTS:</b> Classified A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC [Phenol].</p> <p><b>MUTAGENIC EFFECTS:</b> Mutagenic for mammalian somatic cells. [Phenol]. Mutagenic for bacteria and/or yeast. [Phenol].</p> <p><b>TERATOGENIC EFFECTS:</b> Not available.</p> <p><b>DEVELOPMENTAL TOXICITY:</b> Not available.</p> <p>The substance may be toxic to kidneys, liver, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.</p>
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**Section 4. First Aid Measures**

<b>Eye Contact</b>	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.
<b>Skin Contact</b>	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
<b>Serious Skin Contact</b>	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.
<b>Inhalation</b>	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
<b>Serious Inhalation</b>	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.
<b>Ingestion</b>	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
<b>Serious Ingestion</b>	Not available.

**Section 5. Fire and Explosion Data**

<b>Flammability of the Product</b>	May be combustible at high temperature.
<b>Auto-Ignition Temperature</b>	Not available.
<b>Flash Points</b>	The lowest known value is 79 degrees C (174.2 degrees F) (Phenol)
<b>Flammable Limits</b>	Not available.
<b>Products of Combustion</b>	These products are carbon oxides (CO, CO2).
<b>Fire Hazards in Presence of Various Substances</b>	Flammable in presence of open flames and sparks, of heat. Slightly flammable to flammable in presence of oxidizing materials, of metals.
<b>Explosion Hazards in Presence of Various Substances</b>	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive in presence of heat.
<b>Fire Fighting Media and Instructions</b>	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
<b>Special Remarks on Fire Hazards</b>	Combustible. Phenol + nitrides results in heat and flammable gas generation. Phenol + mineral oxidizing acids results in fire. Phenol + calcium hypochlorite is an exothermic reaction producing toxic fumes which may ignite. May be ignited by electrostatic discharge. Contact with metals may evolve flammable hydrogen gas.

**Special Remarks on Explosion Hazards** Phenol + sodium nitrite causes explosion on heating.  
 Peroxydisulfuric acid + phenol causes explosion.  
 Peroxymonosulfuric acid + phenol can explode.  
 Mixtures of air containing 3-10% Phenol are explosive.  
 When heated, phenol evolves flammable vapors which will form explosive mixtures with air.  
 Potential for an explosive reaction exists when phenol comes into contact with the following: formaldehyde; aluminum chloride + nitromethane (at 110 deg. C)  
 (Phenol)

**Section 6. Accidental Release Measures**

**Small Spill** Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

**Large Spill** Corrosive liquid. Poisonous liquid.  
 Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

**Section 7. Handling and Storage**

**Precautions** Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals, acids, alkalis.

**Storage** Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). For short term storage keep refrigerated. Do not store above 8°C (46.4°F). For long term storage before the seal is broken, keep frozen at -20 deg. C (-4 deg. F) or below. Store in amber-colored, light-resistant containers that are made of glass.

**Section 8. Exposure Controls/Personal Protection**

**Engineering Controls** Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

**Personal Protection** Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.

**Personal Protection in Case of a Large Spill** Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits**  
**Phenol**  
 TWA: 5 (ppm) from ACGIH (TLV) [United States] SKIN  
 TWA: 19 (mg/m<sup>3</sup>) from ACGIH (TLV) [United States] SKIN  
 TWA: 5 from NIOSH [United States]  
 TWA: 19 (mg/m<sup>3</sup>) from NIOSH [United States]  
 TWA: 5 (ppm) from OSHA (PEL) [United States]  
 TWA: 19 (mg/m<sup>3</sup>) from OSHA (PEL) [United States]  
 TWA: 5 (ppm) [Canada]  
 TWA: 19 (mg/m<sup>3</sup>) [Canada]  
 Consult local authorities for acceptable exposure limits.

**Section 9. Physical and Chemical Properties**

<b>Physical state and appearance</b>	Liquid.	<b>Odor</b>	Sharp, sweet, tangy, medicinal
<b>Molecular Weight</b>	Not applicable.	<b>Taste</b>	Not available.
<b>pH (1% soln/water)</b>	Not available	<b>Color</b>	Colorless to light pink
<b>Boiling Point</b>	The lowest known value is 100°C (212°F) (Water).		
<b>Melting Point</b>	Not available.		
<b>Critical Temperature</b>	Not available.		

<b>Specific Gravity</b>	Weighted average: 1.05 (Water = 1)
<b>Vapor Pressure</b>	The highest known value is 2.3 kPa (@ 20°C) (Water) .
<b>Vapor Density</b>	The highest known value is 0.62 (Air = 1) (Water).
<b>Volatility</b>	Not available.
<b>Odor Threshold</b>	0.048 ppm
<b>Water/Oil Dist. Coeff.</b>	Not available.
<b>Ionicity (in Water)</b>	Not available.
<b>Dispersion Properties</b>	See solubility in water, methanol, diethyl ether, acetone.
<b>Solubility</b>	Easily soluble in methanol, diethyl ether. Soluble in cold water, acetone.

**Section 10. Stability and Reactivity Data**

<b>Stability</b>	The product is stable.
<b>Instability Temperature</b>	Not available.
<b>Conditions of Instability</b>	Heat, ignition sources (flames, sparks), incompatible materials
<b>Incompatibility with various substances</b>	Reactive with oxidizing agents, metals, acids, alkalis.
<b>Corrosivity</b>	Extremely corrosive in presence of copper. Slightly corrosive in presence of stainless steel(304), of stainless steel(316). Non-corrosive in presence of glass, of aluminum.
<b>Special Remarks on Reactivity</b>	Air and light sensitive. Prone to redden on exposure to light and air. Incompatible with aluminum chloride, aliphatic amines, amides, formaldehyde, peroxydisulfuirc acid, peroxymonosulfuric acid, acetaldehyde, sodium nitrite, boron trifluoride diethyl ether + 1,3-butadiene, isocyanates, nitrides, mineral oxidizing acids, calcium hypochlorite, halogens, formaldehyde, metals and alloys, lead, zinc, magnesium and their alloys, plastics, rubber, coatings, sodium nitrate + trifluoroacetic acid. Phenol + isocyanates results in heat generation, and violent polymerization. Phenol + 1,3-butadiene and boron trifluoride diethyl ether complex results in intense exothermic reaction. Phenol + acetaldehyde resultes in violent condensation. (Phenol)
<b>Special Remarks on Corrosivity</b>	Minor corrosive effect on bronze. Severe corrosive effect on brass. (Phenol)
<b>Polymerization</b>	Will not occur.

**Section 11. Toxicological Information**

<b>Routes of Entry</b>	Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.
<b>Toxicity to Animals</b>	Acute oral toxicity (LD50): 292 mg/kg (Mouse) (Calculated value for the mixture). Acute dermal toxicity (LD50): 681 mg/kg (Rabbit) (Calculated value for the mixture).
<b>Chronic Effects on Humans</b>	<b>CARCINOGENIC EFFECTS:</b> Classified A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC [Phenol]. <b>MUTAGENIC EFFECTS:</b> Mutagenic for mammalian somatic cells. [Phenol]. Mutagenic for bacteria and/or yeast. [Phenol]. Contains material which may cause damage to the following organs: kidneys, liver, central nervous system (CNS).
<b>Other Toxic Effects on Humans</b>	Very hazardous in case of skin contact (irritant), of ingestion, . Hazardous in case of skin contact (corrosive, sensitizer, permeator), of inhalation. Slightly hazardous in case of eye contact (corrosive).
<b>Special Remarks on Toxicity to Animals</b>	Lowest Published Lethal Dose: LDL [Human] - Route: Oral; Dose: 140 mg/kg LDL [Infant] - Route: Oral; Dose: 10,000 mg/kg (Phenol)
<b>Special Remarks on Chronic Effects on Humans</b>	Animal: passes through the placental barrier. May cause adverse reproductive effects and birth defects (teratogenic) Embryotoxic and/or foetotoxic in animal. May affect genetic material (mutagenic). (Phenol)

**Special Remarks on other Toxic Effects on Humans**

Acute Potential Health Effects:  
 Corrosive!  
 Skin: Causes severe irritation and can cause burns. The skin may turn white and opaque or dull gray, and wrinkled, and later gray-white or yellowish-brown and may be deeply eroded and scarred. Black Gangrene may occur at the sight of contact. It may be absorbed through the skin and cause systemic effects similar to those of ingestion and inhalation. Harmful (moderately toxic) if it is absorbed through skin. Phenol burns may be severe, but painless due to damage to nerve endings causing numbness.  
 Eyes: Causes severe irritation and possible burns. May cause severe corneal injury and blindness.  
 Inhalation: May cause severe irritation of the upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. Aspiration may lead to pulmonary edema. It may affect the gastrointestinal tract (stomach pain, nausea, diarrhea, vomiting), and respiration (difficulty breathing, pulmonary edema, asphixiation) and cause systemic effects similar to that of ingestion. Other symptoms may include cyanosis, sweating and pallor.  
 Ingestion: Harmful if swallowed! Can cause digestive tract burns with nausea, vomiting, salivation, diarrhea, immediate and marked abdominal pain, immediate intense burning of the mouth and throat, white or brownish stains and areas of necrosis on the lips and in the mouth and esophagus, swelling of throat. May cause severe and permanent damage to the digestive tract. May also affect metabolism (loss of appetite, weight loss), cardiovascular system (cardiac arrhythmias, circulatory collapse), and affect behavior/central nervous system. It may also affect behavior/nervous system (weakness, fatigue, CNS depression - excitement followed by headache, drowsiness, agitation, nervousness, insomnia, twitching, dizziness, spasticity, drunkenness, delirium, hallucinations, fainting, convulsions, unconsciousness, coma). Other symptoms may include pallor, cyanosis, difficulty breathing, tachypnea, contracted or dilated pupils, dim vision, ringing in the ears. Advanced stages may cause collapse, unconsciousness, coma, and possible death due to respiratory failure. May also cause liver and kidney damage (inability to urinate, albuminuria, darkened urine, acute tubular necrosis, renal failure),  
 Note: Methemoglobinemia may develop after exposure to Phenol. This can result in cyanosis ( a bluish discoloration of the skin due to deficient oxygenation of the blood).  
 Chronic Potential Health Effects:  
 Inhalation and Ingestion: Prolonged or repeated inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. It may also cause kidney(renal failure, tubular necrosis), heart (necrosis of myocardium), and liver damage (jaundice), degenerative changes in the brain, and affect the blood (changes in red and white blood cell count, anemia). (Phenol)


**Section 12. Ecological Information**

<b>Ecotoxicity</b>	Not available.
<b>BOD5 and COD</b>	Not available.
<b>Products of Biodegradation</b>	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
<b>Toxicity of the Products of Biodegradation</b>	The products of degradation are less toxic than the product itself.
<b>Special Remarks on the Products of Biodegradation</b>	Not available.

**Section 13. Disposal Considerations**

<b>Waste Disposal</b>	Waste must be disposed of in accordance with federal, state and local environmental control regulations.
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**Section 14. Transport Information**

<b>DOT Classification</b>	CLASS 6.1: Poisonous material.
<b>Identification</b>	UNNA: 2821 : Phenol solution PG: II
<b>Special Provisions for Transport</b>	Not available.
<b>DOT (Pictograms)</b>	

**Section 15. Other Regulatory Information and Pictograms**

**Federal and State Regulations**

New York release reporting list: Phenol  
 Pennsylvania RTK: Phenol  
 Minnesota: Phenol  
 Massachusetts RTK: Phenol  
 New Jersey: Phenol  
 New Jersey spill list: Phenol  
 Louisiana spill reporting: Phenol  
 TSCA 8(b) inventory: Phenol; Water; Tromethamine  
 TSCA 4(a) proposed test rules: Phenol  
 TSCA 8(a) IUR: Phenol  
 TSCA 8(d) H and S data reporting: Phenol: effective: 6/1/87; sunset: 6/01/97  
 SARA 302/304/311/312 extremely hazardous substances: Phenol  
 SARA 313 toxic chemical notification and release reporting: Phenol 92.5%  
 CERCLA: Hazardous substances.: Phenol: 1000 lbs. (453.6 kg);

**California Proposition 65 Warnings**

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.  
 California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

**Other Regulations**

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

**Other Classifications**

**WHMIS (Canada)** CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).  
 CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).  
 CLASS E: Corrosive liquid.

**DSCL (EEC)** R24/25- Toxic in contact with skin and if swallowed. R34- Causes burns.  
 S24/25- Avoid contact with skin and eyes.  
 S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 S28- After contact with skin, wash immediately with plenty of water.  
 S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.  
 S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**HMIS (U.S.A.)**

Health Hazard	3
Fire Hazard	2
Reactivity	0
Personal Protection	0

**National Fire Protection Association (U.S.A.)**

Health  Flammability  
 Reactivity  
 Specific hazard

**WHMIS (Canada) (Pictograms)**



**DSCL (Europe) (Pictograms)**



**TDG (Canada) (Pictograms)**



ADR (Europe)  
(Pictograms)



Protective Equipment



Gloves.



Full suit.



Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.



Face shield.

Section 16. Other Information

MSDS Code P3478

References Not available.

Other Special Considerations Major Uses: General disinfectant in solution for toilets, stables, cesspools, floors, drains, etc.; manufacture of colorless or light-colored artificial resins; reagent in chemical analysis; chemical intermediate; in germicidal paints and slimicides.

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Verified by Sonia Owen.

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CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.