

**PRODUCT
NAME**

PHENOL, USP (Liquefied)



SECTION 2: HAZARDS IDENTIFICATION

GHS CLASSIFICATION

Flammable Liquid (Category 4)
Acute Toxicity - Oral (Category 4)
Acute Toxicity - Dermal (Category 3)
Skin Corrosion (Category 1A)
Eye Damage (Category 1)
Carcinogenicity (Category 2)
Toxic to Reproduction (Category 2)
Specific Target Organ Toxicity - Single Exposure (Category 1) - Skin corrosive; anesthetic
Specific Target Organ Toxicity - Repeated Exposure (Category 1) - Central nervous system, liver, and kidneys

PICTOGRAM

SIGNAL WORD

Danger

HAZARD STATEMENT(S)

Combustible liquid.
Harmful if swallowed.
Toxic if in contact with skin.
Causes severe skin burns and eye damage.
Causes serious eye damage.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.
Toxic to aquatic organisms.
Causes damage to organs skin, respiratory tract.
Causes damage to organs through prolonged or repeated exposure.(Central nervous system, liver, kidneys)
Corrosive to the respiratory tract.

AUSTRALIA-ONLY HAZARDS



PRECAUTIONARY STATEMENT(S)

Prevention	<p>Keep away from heat, sparks, open flames and/or hot surfaces Wear protective gloves, eye protection, face protection and protective clothing Wash thoroughly after handling Obtain special instructions before use Do not breathe dust/fume/gas/mist/ vapors/spray Do not eat, drink or smoke when using this product Do not handle until all safety precautions have been read and understood</p>
Response	<p>IN CASE OF FIRE: Small fire: dry chemical, CO2 or water spray. Large fire: dry chemical, CO2, alcohol resistant foam or water spray. Do not get water inside containers. Keep unignited containers cool with water. Vapor can be explosive if product is heated above its flash point. Contaminated fire control waters may be corrosive, and should be diked or collected in ponds if possible, and disposed of properly. IF SWALLOWED: Immediately call a poison center or medical professional; Rinse mouth. IF ON SKIN (HAIR): Wash with plenty of water; Call a poison center or medical professional; Take off immediately all contaminated clothing and wash it before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center or medical professional. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or medical professional. IF EXPOSED OR CONCERNED: Get medical advice/attention if you feel unwell.</p>
Storage	Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	Dispose of contents and/or container in accordance with local regulations.

HMIS CLASSIFICATION

Health Hazard	4	Flammability	2
Reactivity	0	Personal Protection	K

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	Liquefied Phenol						
BOTANICAL NAME	Not applicable						
SYNONYM	Not applicable						
CHEMICAL FORMULA	Not applicable						
CAS NUMBER	108-95-2 (General)						
ALTERNATE CAS NUMBER	217182-78-0 (Hydrated Phenol)						
MOLECULAR WEIGHT	Not applicable						
COMPOSITION	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #008000; color: white;"> <th style="text-align: left;">CHEMICAL NAME</th> <th style="text-align: left;">CAS NUMBER</th> <th style="text-align: left;">% BY WEIGHT</th> </tr> </thead> <tbody> <tr> <td>PHENOL</td> <td>108-95-2</td> <td>>89.0*</td> </tr> </tbody> </table> <p>There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as health hazards and hence require reporting in this section.</p>	CHEMICAL NAME	CAS NUMBER	% BY WEIGHT	PHENOL	108-95-2	>89.0*
CHEMICAL NAME	CAS NUMBER	% BY WEIGHT					
PHENOL	108-95-2	>89.0*					
NOTES	* Liquefied Phenol is Phenol maintained in a liquid condition by the presence of about 10% water. It contains not less than 89.0% by weight of C6H6O. It may contain a suitable stabilizer.						

SECTION 4: FIRST-AID MEASURES

IN CASE OF EYE CONTACT	In case of eye contact, promptly flush the eyes with copious amounts of water for 15 minutes (lifting upper and lower lids occasionally) and obtain medical attention.
IN CASE OF SKIN CONTACT	Skin contact with phenol requires immediate flushing of the contaminated area with soap and water at a sink or emergency shower for a good 15 minutes. Remove contaminated clothing. Obtain medical attention.

IF SWALLOWED	Call a physician. Wash out mouth with water. Do not induce vomiting without medical advice.
IF INHALED	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
SYMPTOMS AND EFFECTS	Good work practices can help reduce hazardous exposures. Not expected to present a significant hazard under anticipated conditions of normal use.

SECTION 5: FIREFIGHTING MEASURES

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL	Not applicable
FLAMMABLE PROPERTIES	Combustible liquid.
HAZARDOUS COMBUSTION PRODUCTS	Vapor can be explosive if product is heated above its flash point (79 °C, 174,2 °F).
EXTINGUISHING MEDIA	Small fire: dry chemical, CO₂ or water spray. Large fire: dry chemical, CO₂, alcohol resistant foam or water spray. Do not get water inside containers. Keep unignited containers cool with water. Contaminated fire control waters may be corrosive, and should be diked or collected in ponds if possible, and disposed of properly.
PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS	Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
METHODS & MATERIAL FOR CONTAINMENT	Small liquid spills of 50 ml or less may be absorbed on paper toweling, vermiculite, or other absorbent material and placed in a sealed metal container or double plastic bags for proper disposal as hazardous waste. Be sure to wear gloves and other personal protective equipment when cleaning up small phenol spills.
CLEANUP PROCEDURE	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. Shut off all sources of ignition. Evacuate the area. If necessary, employ water fog to disperse the vapors. Absorb the matter with compatible vermiculite or other absorbing material. Place in a suitable container and retain for disposal. Ventilate and clean the affected area. Do not flush into sewerage system or to drains.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING	Do not inhale. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Wash thoroughly after handling.
STORAGE CONDITIONS	Store in original container, tightly sealed, protected from direct sunlight, in a dry and well-ventilated area, away from incompatible materials. Store in accordance with local regulations. Eliminate all ignition sources. Separate from oxidizing materials. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. The freezing point of liquefied phenol 90% is 12.6°C (55°F). Product is not affected by cycling freezing and thawing conditions as long as label directions are followed. Phenol can be left at room temperature or in a water bath at 40°C to thaw. (Vent container before heating and do not heat above 60°C (140°F). Gently stir or tumble the container to ensure it is homogenous. Preserve in tight, light-resistant glass containers.

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

Chemical Name: PHENOL CAS #: 108-95-2

	TWA	Ceiling	STEL	REL	IDLH	Remarks
OSHA PEL	5 ppm	N/L	-	-	-	Skin*
ACGIH TLV	5 ppm	N/L	N/L	-	-	Skin*
NIOSH	5 ppm	15.6 ppm	N/L	N/L	250 ppm	Skin*
AIHA WEEL	N/L	N/L	N/L	-	-	-
Safe Work Australia HSIS	4 mg/m ³	N/L	N/L	-	-	Skin*
HSE	2 ppm	N/L	N/L	-	-	Skin*

N/L = Not Listed

EXPOSURE GUIDELINES

Consult local authorities for provincial or state exposure limits

PERSONAL PROTECTIVE EQUIPMENT

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by WHMIS or OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. **Skin:** Wear appropriate gloves to prevent skin exposure. Always wash hands thoroughly after handling phenol, even if gloves are used. **Clothing:** Wear appropriate protective clothing to minimize contact with skin. **Respirators:** Follow WHMIS or OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

SPECIFIC ENGINEERING CONTROLS

Adequate mechanical ventilation. Fumehood, eye wash station, and safety shower.

NOTES

* Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE

Liquid

DESCRIPTION

Colorless to pink liquid, which may develop a red tint upon exposure to air or light. Has a characteristic, somewhat aromatic odor.

SOLUBILITY

Miscible with alcohol, with ether, and with glycerin. A mixture of equal volumes of Liquefied Phenol and glycerin is miscible with water.

ODOR

Somewhat aromatic odor

FLAMMABILITY

Combustible liquid.

ODOR THRESHOLD

Not available

pH

Neutral

MELTING POINT

12.6 °C , 55 °F

BOILING POINT

>100 °C, >212 °F

FREEZING POINT

12.6 °C , 55 °F

FLASH POINT

79 °C, 174,2 °F
(Closed Cup)

SPECIFIC GRAVITY

1.065

EVAPORATION RATE

Not available

EXPLOSIVE LIMIT

Not available

UPPER FLAMMABLE/ EXPLOSIVE LIMIT(S)

Not available

LOWER FLAMMABLE/ EXPLOSIVE LIMIT(S)

Not available

VAPOR PRESSURE

0.35 mmHg

VAPOR DENSITY (AIR = 1)

3.24

RELATIVE DENSITY (WATER = 1)

Not available

log P (OCTANOL-WATER)

1.46

**AUTO-IGNITION
TEMPERATURE**

Not available

**DECOMPOSITION
TEMPERATURE**

Not available

VISCOSITY

Not available

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY

Not established

STABILITY

Stable under recommended storage conditions.
When heated, phenol will produce flammable vapors that are highly toxic (at just a few parts per million) and explosive (at concentrations of 3% to 10% in air).

MATERIALS TO AVOID

Strong oxidants, alkyl benzene sulfonic acids, calcium hypochlorite, acids, aluminum chloride.

**HAZARDOUS DECOMPOSITION
PRODUCTS**

Toxic fumes of carbon monoxide, carbon dioxide, nitrogen oxides and other gases may occur

HAZARDOUS POLYMERIZATION

Will not occur

**POSSIBILITY OF HAZARDOUS
REACTION**

Above 79°C explosive vapour/air mixtures may be formed.

CONDITIONS TO AVOID

Moisture, sunlight and extreme temperatures

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Oral: Rat: LD50: (mg/kg): 317
Dermal: Rabbit LD50: (mg/kg): 630
Inhalation: Rat: LD50: (mg/L/4hr): Not available

SKIN CORROSION/IRRITATION

Corrosive, pain, numbness, whitening, and burns occur unless promptly removed.
Skin: Rabbit: 535 mg open irrigation test: Severe

**SERIOUS EYE DAMAGE/EYE
IRRITATION**

Causes severe eye irritation, with possible damage and blindness.
Eye: Rabbit: 5 mg: Severe

**RESPIRATORY OR SKIN
SENSITIZATION**

Based on available data, the classification criteria are not met.

GERM CELL MUTAGENICITY

Cytogenetic analysis: hamster ovary: 2 g/L
Cytogenetic analysis: hamster embryo: 100 µmol/L
Cytogenetic analysis: human other cell types: 300 µmol/L/30 hour
Unscheduled DNA synthesis: hamster embryo: 3 µmol/L
DNA inhibition: human HeLa cell: 1 mmol/L
Sister chromatid exchange: Hamster ovary: 300 mg/L

CARCINOGENICITY

OSHA PHENOL is not listed.
NTP PHENOL is not listed.
IARC PHENOL is listed in group 3 (not classifiable as to its carcinogenicity to humans).
California Proposition 65 This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

**ADDITIONAL CARCINOGENICITY
INFORMATION**

Skin: Mouse: lowest published toxic dose: 16 g/kg/40 week- intermittent: Skin and Appendages: Tumors (Tumorigenic: Carcinogenic by RTECS criteria)
Skin: Mouse: toxic dose : 4,000 mg/kg/24 week- intermittent: Skin and Appendages: Tumors (Tumorigenic: Carcinogenic by RTECS criteria)

REPRODUCTIVE TOXICITY

Intraperitoneal: Rat: lowest published toxic dose: 600 mg/kg (12-14 day pregnant): Effects on embryo or fetus: Fetotoxicity (except death, e.g., stunted fetus)
Oral: Rat: lowest published toxic dose: 300 mg/kg (6-15 day pregnant): Effects on fertility: Postimplantation mortality (e.g., dead and/or resorbed implants per total number of implants)

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE

Highly corrosive to the skin and readily absorbed through it, whereupon it can affect the central nervous system and cause damage to the liver and kidneys. Because it has a local anesthetic effect, little or no pain may be felt on initial contact. Skin in contact with phenol will generally turn white; later, severe burns may develop. Phenol is rapidly absorbed through the skin, and toxic or even fatal amounts can be absorbed through relatively small areas.

SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE

Repeated contact affects central nervous system, liver, and kidneys.

ASPIRATION HAZARDS

Based on available data, the classification criteria are not met.

SIGNS AND SYMPTOMS OF EXPOSURE

Phenol can pose a severe health hazard and should be handled with extreme caution. Phenol is readily absorbed into the body through inhalation, skin contact, and ingestion, particularly when in liquid solutions. When sufficient amounts are absorbed, the effects can be increased and irregular heart rate, low blood pressure, difficult breathing, cough, and skin discoloration. Death can occur in minutes, usually due to respiratory failure. Effects may be aggravated for persons with kidney or hepatic disease. Skin contact may produce burns. Inhalation may produce coughing, choking or shortness of breath. Inflammation of the eye is characterized by redness, watering and itching. Skin inflammation is characterized by itching, scaling, reddening or occasional blistering. Severe over-exposure can result in death.

POTENTIAL HEALTH EFFECTS

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation and possible corrosion.
Ingestion	Harmful if swallowed. Irritating and corrosive to mouth and throat. Ingestion of as little as 1 gram can be fatal to humans.
Skin	Toxic if in contact with skin. Highly corrosive to the skin and readily absorbed through it, whereupon it can affect the central nervous system and cause damage to the liver and kidneys. Because it has a local anesthetic effect, little or no pain may be felt on initial contact. Skin in contact with phenol will generally turn white; later, severe burns may develop. Phenol is rapidly absorbed through the skin, and toxic or even fatal amounts can be absorbed through relatively small areas.
Eyes	Can cause severe damage to eyes, including blindness.

SECTION 12: ECOLOGICAL INFORMATION

TOXICITY

LC50: 96 Hr: Fish: (mg/L): Not available
IC50: 72 Hr: Algae: (mg/L): Not available
EC50: 48 Hr: Daphnia magna: (mg/L): Not available

PERSISTENCE AND DEGRADABILITY

Not available

BIOACCUMULATIVE POTENTIAL

Low
Log Pow: 1.46

MOBILITY IN SOIL

Miscible in water

OTHER ADVERSE EFFECTS

Toxic to aquatic organisms.
This product is not intended to be released into the environment

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

Dispose of in accordance with federal/local laws and regulations. Avoid release into the environment.

SECTION 14: TRANSPORT INFORMATION

UNITED STATES & CANADA

UN PROPER SHIPPING NAME

PHENOL SOLUTION

UN NUMBER 2821

CLASS 6.1

PACKING GROUP II

AUSTRALIA

UN PROPER SHIPPING NAME PHENOL SOLUTION

UN NUMBER 2821

CLASS 6.1

PACKING GROUP II

HAZCHEM 2X

ENVIRONMENTAL HAZARDS Not available

SPECIAL SHIPPING INFORMATION Not applicable

SECTION 15: REGULATORY INFORMATION

Chemical Name & CAS	CERCLA 40 CFR Part 302.4	SARA (Title III) 40 CFR Part 372.65	EPA 40 CFR Part 355		Right-to-know			California Prop 65
			Appendix A	Appendix B	Pennsylvania	New Jersey	Massachusetts	
PHENOL 108-95-2	X	X	X	X	X	X	X	N/L

N/L = Not Listed; X = Listed

AUSTRALIAN REGULATIONS

Chemical Name & CAS	Poisons and Therapeutic Goods Regulation	Therapeutic Goods Act	Code of Practices - Illicit Drug Precursors
PHENOL 108-95-2	N/L	Listed as Schedule 2	N/L

END OF MSDS

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