



PURITAN PRODUCTS

Effective Date: 12/18/13

Replaces Revision: Not Applicable

NON-EMERGENCY TELEPHONE
610-866-4225

24-HOUR CHEMTREC EMERGENCY TELEPHONE
800-424-9300

SDS – SAFETY DATA SHEET

1. Identification

Product Identifier: PHENOL

Synonyms: Carbolic Acid, Hydroxybenzene, Monohydroxybenzene, Oxybenzene, Phenic Acid, Phenyl Hydrate, Phenyl Hydroxide, Phenylic Acid, Phenylic Alcohol

Chemical Formula: C₆H₅OH

Recommended Use of the Chemical and Restrictions On Use: Industrial Reagent

Manufacturer / Supplier: Puritan Products; 2290 Avenue A, Bethlehem, PA 18017 **Phone:** 610-866-4225

Emergency Phone Number: 24-Hour Chemtrec Emergency Telephone 800-424-9300

2. Hazard(s) Identification

Classification of the Substance or Mixture:

Flammable liquids (Category 4)
Acute toxicity, Oral (Category 4)
Acute toxicity, Inhalation (Category 2)
Acute toxicity, Dermal (Category 3)
Skin corrosion (Category 1B)
Serious eye damage (Category 1)
Germ cell mutagenicity (Category 2)
Specific target organ toxicity - single exposure (Category 2)
Specific target organ toxicity - repeated exposure (Category 2)
Acute aquatic toxicity (Category 3)

Risk Phrases:

R22: Harmful if swallowed.
R23/R24: Toxic if inhaled or in contact with skin.
R35: Causes severe burns.
R48: Danger of serious damage to health by prolonged exposure.
R52: Harmful to aquatic organisms.
R68: Possible risk of irreversible effects.

Label Elements:

Trade Name: PHENOL

Signal Word: Danger



Hazard Statements:

H227: Combustible liquid.
H302: Harmful if swallowed.
H311 + 331: Toxic in contact with skin or if inhaled.
H314: Causes severe skin burns and eye damage.
H330: Fatal if inhaled.
H341: Suspected of causing genetic defects.
H371: May cause damage to organs.
H373: May cause damage to organs through prolonged or repeated exposure.
H402: Harmful to aquatic life.

Precautionary Statements:

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P264: Wash hands thoroughly after handling.
P260: Do not breathe dust / fume / gas / mist / vapors / spray.
P280: Wear protective gloves / protective clothing / eye protection / face protection.
P284: Wear respiratory protection.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER or doctor / physician.

3. Composition / Information on Ingredients

CAS Number: 108-95-2

EC Number: 203-632-7

Index Number: 604-001-00-2

Molecular Weight: 94.11 g/mol

Ingredient	CAS Number	EC Number	Percent	Hazardous	Chemical Characterization
Phenol	108-95-2	203-632-7	60-100%	Yes	Substance
Water	7732-18-5	231-791-2	0 - 40%	No	Mixture

4. First-aid Measures

General Advice: Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

Inhalation: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention immediately.

Ingestion: Speed is very important with respect to treatment because Phenol is immediately life-threatening. Gastric lavage may be used if performed soon after ingestion. If used, activated charcoal should be administered as a slurry either aqueous or mixed with saline cathartic or sorbitol. Administer one dose of a cathartic, mixed with charcoal or give separately. Get medical attention immediately.

Skin Contact: Speed is very important with respect to treatment because Phenol spills on the skin, especially in high concentrations, are immediately life threatening. Immediately flush with large volumes of water while removing contaminated clothing. Continue to thoroughly wash with water for at least 15 minutes after clothing is removed. For additional treatment, an undiluted solution of polyethylene glycol (PEG) 300 or 400 can be dabbed on the skin. Emergency first aid personnel should wear butyl, viton or neoprene gloves. Dispose of all contaminated clothing, avoiding additional skin contact. Get medical attention at immediately.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire-fighting Measures

Fire: Flammable. Above 73C (163.4F,) vapor-air mixtures may be formed that can be ignited by open fires, sparks, or glowing surfaces. The compound emits toxic times when heated.

Explosion: Heating of phenol in containers will cause a pressure rise with risk of bursting.

Fire Extinguishing Media: Carbon Dioxide, regular dry chemical, alcohol-resistant foam, water.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Do not get water directly on material. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Avoid breathing vapors, mist, or gas.

Environmental Precautions and Methods and Materials for Containment and Cleaning Up: Do not touch spilled material. Stop leak if possible without personal risk. Contain and recover liquid when possible. Avoid release to the environment. Absorb with sand or other non-combustible material. Place all spill residues in a suitable container. Do not flush to sewer!

7. Handling and Storage

Precautions for Safe Handling and Conditions for Safe Storage, Including Any Incompatibilities:

Avoid formation of dust and aerosols. Avoid breathing vapor or mist. Use only with adequate ventilation. Keep emergency spill kit near storage and use areas. Dispose of all contaminated clothing, avoiding skin contact.

Store and handle in accordance with all current regulations and standards. Keep container tightly closed. Store in a cool, dry place. Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature: 2 - 8C. Empty containers may contain product residue. Follow SDS and warning labels even when containers are empty. See original container for storage recommendations. Keep separated from incompatible substances.

8. Exposure Controls / Personal Protection

Airborne Exposure Limits:

OSHA Permissible Exposure Limit (PEL) skin: 5 ppm (TWA); 19 mg/m³ (TWA)

ACGIH Threshold Limit Value (TLV) skin: 5 ppm

Ventilation System: A system of local and / or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved): If the exposure limit is exceeded and engineering controls are not feasible, use appropriate NIOSH approved respirator in accordance with 29 CFR 1910.132 and 1910.134, to prevent overexposure. Respirators must be selected based on the airborne levels found in the workplace and must not exceed the working limits of the respirator. For emergencies or instances where the exposure levels are not known, use a full face piece positive-pressure, air-supplied respirator. **WARNING:** Air purifying respirators do not protect workers in Oxygen-deficient atmospheres.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Protective materials are: nitril rubber for splash protection, butyl rubber for full contact protection. Refer to 29CFR 1910.132. Contact an Industrial Hygienist familiar with the specific-use situation to discuss material thickness and breakthrough times.

Eye Protection: Use a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Other: Facilities for quick drenching of the body should be provided in accordance with 29 CFR 1910.151.

9. Physical and Chemical Properties

Appearance: Clear liquid

Odor: Sweet odor

Odor Threshold: Not determined

pH: No data available.

% Volatiles by volume @ 21C (70F): 100

Melting Point: 1C (35F)

Boiling Point / Boiling Range: 180C (356F)

Flash Point: 79C (174.2F) - closed cup

Evaporation Rate (BuAC=1): Not determined

Flammability: Flammable

Upper / Lower Flammability or Explosive Limits: UEL: 8.6 / LEL: 1.8

Vapor Pressure (mm Hg): 0.357 mm Hg @ 20C (68F); 1 mm Hg @ 40C (104F)

Vapor Density (Air=1): 3.24

Relative Density: 1.06 g/cm³

Solubility: completely miscible

Partition Coefficient: n-octanol / water: log Pow: 1.46

Auto-ignition Temperature: 605C (1121F)

Decomposition Temperature: Not determined

Viscosity: Not determined

10. Stability and Reactivity

Reactivity and / or Chemical Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions and Conditions to Avoid: Heat, flames, ignition sources, and Incompatibles.

Incompatible Materials: Strong oxidizers, acid chlorides and acid anhydrides, halogens, especially calcium hypochlorite (contact with it may cause fires and explosions.) Hot phenol attacks copper, aluminum, magnesium, lead, and zinc.

Hazardous Decomposition Products: Carbon monoxide, irritating aldehydes, ketones and unidentified organic compounds may be formed during combustion.

11. Toxicological Information

Emergency Overview: POISON! DANGER! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. RAPIDLY ABSORBED THROUGH SKIN. CORROSIVE. CAUSES SEVERE BURNS TO EVERY AREA OF CONTACT. AFFECTS CENTRAL NERVOUS SYSTEM, LIVER AND KIDNEYS. COMBUSTIBLE.

Potential Health Effects:

The major hazard of phenol is its ability to penetrate the skin rapidly, particularly when liquid, causing severe injury which can be fatal. Phenol also has a strong corrosive effect on body tissue causing severe chemical burns. Due to its local anesthetizing properties, skin burns may be painless.

Inhalation: Breathing vapor, dust or mist results in digestive disturbances (vomiting, difficulty in swallowing, diarrhea, loss of appetite.) Phenol will irritate, possibly burn respiratory tract. Other symptoms listed under ingestion may also occur.

Ingestion: Poison. Symptoms may include burning pain in mouth and throat, abdominal pain, nausea, vomiting, headache, dizziness, muscular weakness, central nervous system effects, increase in heart rate, irregular breathing, coma, and possibly death. Acute exposure is also associated with kidney and liver damage. Ingestion of 1 gram has been lethal to humans.

Skin Contact: Corrosive. Rapidly absorbed through the skin with systemic poisoning effects to follow. Discoloration and severe burns may occur, but may be disguised by a loss in pain sensation.

Eye Contact: Corrosive. Eye burns with redness, pain, blurred vision may occur. Phenol may cause severe damage and blindness.

Chronic Exposure: Repeated exposure to phenol may result in symptoms described for acute poisoning as well as eye and skin discoloration.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin, eye or central nervous system disorders, or impaired liver, kidney, or pulmonary function may be more susceptible to the effects of this substance.

Germ cell mutagenicity: In vitro tests showed mutagenic effects

Reproductive Toxicity: No data available

Specific Target Organ Toxicity - Single Exposure (Globally Harmonized System:) No data available.

Specific Target Organ Toxicity - Repeated Exposure (Globally Harmonized System:) May cause damage to organs through prolonged or repeated exposure.

Numerical Measures of Toxicity: Cancer Lists: NTP Carcinogen

Ingredient	Known	Anticipated	IARC Category
Phenol (108-95-2)	No	No	3
Water (7732-18-5)	No	No	None

Acute Toxicity:

Oral rat LD50: 317 mg/Kg

Skin rabbit LD50: 630 mg/kg

Inhalation rat LC50: 316 mg/m³

Irritation data: skin rabbit, standard Draize, 500 mg / 24h severe; eye rabbit, standard Draize 5 mg / 30s rinse, mild.

Investigated as a tumorigen, mutagen, reproductive effector.

12. Ecological Information

Ecotoxicity: This material is expected to be toxic to aquatic life.

TDLO Minnow 30 min 79 ug/l

LC50 Rainbow trout 5.6-11.3 mg/l/24 hr in a static bioassay.

LC50 Goldfish 60-200 mg/l/24 hr in a static bioassay.

LD0 Daphnia magna 16 mg/l /Conditions of bioassay not specified.

Persistence and Degradability: Biodegradation is generally rapid (days.) Phenol rapidly degrades in sewage, soil, fresh water and seawater. Under anaerobic conditions, degradation is slower and microbial adaptation periods longer.

Bioaccumulative Potential: This material is not expected to significantly bioaccumulate.

Mobility in Soil: When released into the soil, this material is not expected to leach into groundwater. When released into the soil, this material may evaporate to a moderate extent. When released into the soil, this material is expected to have a half-life between 1 and 10 days.

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

UN Number: UN 2821

UN Proper Shipping Name: Phenol solution

Packing Group: II



DOT

IMDG

IATA

Land Transport ADR/RID and GGVS/GGVE (Cross Border / Domestic)

Transport Hazard Class(es): 6.1

Maritime Transport IMDG/GGVSea

Transport Hazard Class(es): 6.1

EMS-No: F-A, S-A

Marine Pollutant: No

Air Transport ICAO-TI and IATA-DGR

Transport Hazard Class(es): 6.1

Transport in Bulk according to Annex II of MARPOL 73/78 and the IBC Code

Special Precautions for User: No additional information

15. Regulatory Information

Chemical Inventory Status – Part 1

Ingredient	TSCA	EC	Japan	Australia
Phenol (108-95-2)	Yes	Yes	Yes	Yes
Water (7732-18-5)	Yes	Yes	Yes	Yes

Chemical Inventory Status – Part 2

Ingredient	Korea	Canada		Phil.
		DSL	NDSL	
Phenol (108-95-2)	Yes	Yes	No	Yes
Water (7732-18-5)	Yes	Yes	No	Yes

Federal, State & International Regulations - Part 1

Ingredient	SARA 302		SARA 313	
	RQ	TPQ	List Chemical	Catg.
Phenol (108-95-2)	1000	500*	Yes	No
Water (7732-18-5)	No	No	No	No

Federal, State & International Regulations - Part 2

Ingredient	RCRA		TSCA
	CERCLA	261.33	8(d)
Phenol (108-95-2)	1000	U188	No
Water (7732-18-5)	No	No	No

Chemical Weapons Convention: No		TSCA 12(b): No		CDTA: No
SARA 311/312:	Acute: Yes	Chronic: Yes	Fire: Yes	Pressure: No
Reactivity: No		Pure / Liquid		

16. Other Information

THE INFORMATION CONTAINED IN THIS DATA SHEET IS BASED ON THE DATA AVAILABLE TO PURITAN PRODUCTS AT THIS TIME. WHILE BELIEVED TO BE ACCURATE, PURITAN PRODUCTS DOES NOT CLAIM IT TO BE ALL INCLUSIVE. IT IS PROVIDED INDEPENDENT OF ANY SALE OF THE PRODUCT, FOR THE PURPOSE OF HAZARD COMMUNICATION, AND AS A GUIDE FOR THE APPROPRIATE PRECAUTIONARY HANDLING OF THE PRODUCT BY PROPERLY TRAINED INDIVIDUALS. IT IS NOT INTENDED TO PROVIDE PRODUCT PERFORMANCE OR APPLICABILITY INFORMATION, AND NO EXPRESS OR IMPLIED WARRANTY OF ANY KIND IS MADE WITH RESPECT TO THE PRODUCT, THE UNDERLYING PRODUCT DATA, OR THE INFORMATION CONTAINED HEREIN.

YOU ARE URGED TO OBTAIN MATERIAL SAFETY DATA SHEETS FOR ALL PRODUCTS YOU BUY, PROCESS, USE OR DISTRIBUTE, AND ARE ENCOURAGED TO ADVISE THOSE WHO MAY COME IN CONTACT WITH SUCH PRODUCTS OF THE INFORMATION CONTAINED THEREIN.

TO DETERMINE THE APPLICABILITY OR EFFECT OF ANY LAW OR REGULATION WITH RESPECT TO THE PRODUCT, YOU SHOULD CONSULT WITH YOUR LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENT AGENCY. WE WILL NOT PROVIDE ADVICE ON SUCH MATTERS, OR BE RESPONSIBLE FOR ANY INJURY OR DAMAGE RESULTING FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.