



Marubeni

MATERIAL SAFETY DATA SHEET

U 83010

10236.

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CHEMTREC: 800-424-9300

PHENOL, 90% SOLUTION

SECTION 1 – Chemical Product Information

Product name: Phenol
Synonym: Hydroxybenzene, phenyl alcohol, carbolic acid *and others*
Europe ELINCS/EINECS #: 203-632-7
Material Use: Mfg of: phenolic resins, bisphenol A, caprolactam, etc; disinfectant, & *others*

SECTION 2 – Composition/Information on Ingredients

Name	CAS #	%	TLV Ppm/mg/m ³	LD ₅₀ ORAL	(mg/kg) SKIN	LC ₅₀ ppm INHALATION
Hydroxybenzene	108-95-2	90	5 / 19 (skin)	279	500	46

SECTION 3 – HAZARD IDENTIFICATION

Rapid Hazard Guide: combustible liquid & vapour, highly toxic by ingestion & by skin absorption, corrosive to living tissue

WHMIS Class (Canada): B 3, D 1A, E

Key: B 2 – Flash Point <38°C, B 3 – Flash Point >38°C & <93°C
D 1 – Immediately Toxic, D 2 – Chronic Toxicity
C – Oxidizing Substance, E – Corrosive

HMIS Rating (U.S.A.): Health – 4, Fire – 2, Reactivity – 2

Key: 0=minimal, 1=slight, 2=moderate, 3=serious, 4=severe

SECTION 4 – FIRST AID MEASURES

Skin: Immediately, apply a 50% solution in water of Polyethylene Glycol PEG 300 or 400 to skin and wipe the affected area. Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly cleaned or laundered. Seek medical help promptly if there is persistent itching or redness in the affected area.

Eyes: Wash eyes with plenty of water, holding eyelids open for 60 minutes (*by the clock*). Seek medical assistance promptly, but keep emergency vehicle waiting while washing continues.

Inhalation: Remove from contaminated area promptly. **CAUTION: Rescuer must not endanger himself!** If victim's breathing stops, administer artificial respiration and seek medical aid promptly.

Ingestion: Give 250-300ml of water to dilute the product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below the hips to prevent inhalation of vomited material. Repeat the water after vomiting. Seek medical help promptly.

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point:	79°C / 175°F (closed cup)
Autoignition Temperature:	715°C / 1319°F
Flammable Limits:	1.3% - 9.5%
Combustion Products:	Carbon monoxide, nitrogen oxides, part oxidized hydrocarbon fragments including aldehydes, acids, and acrid smoke
Firefighting Precautions:	Foam, dry chemical, water fog or spray to cool & dilute; firefighters <i>must</i> wear full-body encapsulating chemically resistant suit and use positive pressure SCBA
Static Discharge:	Cannot accumulate a static charge

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Leak Precaution:	Dike to control spillage and prevent environmental contamination
Handling Spill:	Ventilate contaminated area; recover free liquid with suitable pumps; absorb residue on sand or vermiculite, pick up using non-sparking plastic shovel, & store in labeled, closed containers for disposal

NOTE: Wear a respirator with organic vapour cartridge AND a full-body chemical resistant suit.

SECTION 7– HANDLING AND STORAGE

Store and use in a cool dry environment, away from sources of ignition, heat and substances named in Part VII. Phenol gradually darkens on exposure to light, acquiring a pink tinge.

Empty containers may contain a flammable/explosive vapour. Never cut, drill, weld or grind on or near this container, whether empty or full. *Always replace drum, pail or IBC cap prior to moving the container!*

Avoid breathing product mist. Use in a fully enclosed apparatus, with adequate point-source ventilation to maintain airborne concentration of the product below the TLV (see IV, IX above). If dealing with a spill, and ventilation is impractical, wear a suitable respirator (part IX). Avoid all contact with skin and wash work clothes frequently. An eye bath and safety shower should be available near the workplace.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

ACGIH TLV: 5ppm / 19mg/m³ (skin)

OSHA PEL: 5ppm / 19mg/m³ (skin)

STEL: Not listed

Ventilation: Closed handling system is the preferred method to minimize exposure; point source mechanical ventilation may be required to maintain airborne vapour or mist concentrations below TLV; a respirator with organic vapour cartridge & a dust/mist filter should be available for "escape" purposes, should ventilation fail (*always store respirator in an airtight container [eg: "Tupperware"] to maintain cartridge "freshness"*)

NIOSH/OSHA RECOMMENDATIONS FOR PHENOL CONCENTRATIONS IN AIR:

Up to 50 ppm: Chemical cartridge respirator with organic vapour cartridge(s) and dust and mist filter(s); or SAR (supplied Air Respirator).

Up to 125 ppm: SAR operated in a continuous-flow mode; or powered air-purifying respirator with organic vapour cartridge(s) and dust and mist filter(s).

Up to 250 ppm: Full facepiece chemical cartridge respirator with organic vapour cartridge(s) and high-efficiency particulate filter(s); or gas mask with organic vapour canister and high-efficiency particulate filter; or powered air-purifying respirator with a tight-fitting facepiece and organic vapour cartridge(s) and having a high-efficiency particulate filter; or full facepiece SCBA; or full-facepiece SAR.

Hands: Gauntlet-style butyl or "Viton" gloves – *always confirm suitability with supplier*

Eyes: Chemical goggles, a face shield is recommended if splashing is possible

Clothing: Impermeable (hands, above) apron, boots, long sleeves, if splashing is possible; if splashing is likely, a full body chemical resistant suit may be required

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Odour & Appearance:	Clear, colourless to pale pink, liquid with sweet, acrid, tarry odour
Odour Threshold:	0.06ppm – highly variable
Vapour Pressure:	0.357mmHg / 0.048kPa (20°C/68°F)
Evaporation Rate (Butyl Acetate=1):	Not known – below 0.1
Vapour Density (air=1):	3.2

Boiling Point:	182°C / 359°F
Freezing Point:	12.6°C / 55°F
Specific Gravity:	1.065 (20/20°C)
Water Solubility:	Approximately 70grams per litre (20°C / 68°F); completely soluble above 65°C
-in other solvents	Aromatic hydrocarbons, alcohol, diethyl ether, acetone, carbon disulphide, alkalies
Viscosity:	11 centipose (20°C / 68°F)
pH:	6
Conversion Factor:	1ppm = 3.84mg/m ³
Molecular Weight:	94 grams per mole

SECTION 10 – STABILITY AND REACTIVITY

Dangerously Reactive With:	Strong oxidizing agents; polymerises in the presence of alkalies; formaldehyde, nitrobenzene or aluminum chloride may cause an explosion
Also Reactive With:	Reducing agents release hydrogen gas; hot phenol attacks aluminum, magnesium, lead and zinc; attacks some plastics, rubbers and coatings
Chemical Stability:	Stable; will not polymerize
Decomposes in Presence of:	light
Decomposition Products:	None apart from Hazardous Combustion Products
Mechanical Impact:	Not sensitive

SECTION 11 – TOXICOLOGICAL INFORMATION

i. EFFECTS OF ACUTE EXPOSURE

Skin Contact:	Corrosive to skin; <i>anaesthetic effect can mask pain sensation</i> ; muscle weakness, tremors, loss of co-ordination, convulsions, collapse, circulatory collapse, death
Skin Absorption:	Yes, <i>extensive exposure (~25% of body surface) to concentrated product may be lethal by this route</i>
Eye Contact:	Corrosive to eyes, may cause permanent damage – even blindness
Inhalation:	Does not form vapour; mists pressured to be corrosive to respiratory tract
Ingestion:	Lowest lethal dose estimated as 140ml; 15ml has caused death!; severe irritation, burns and swelling to mouth, throat and stomach; internal bleeding, falling blood pressure, collapse, death

ii. EFFECTS OF CHRONIC EXPOSURE

General:	Following long-term contact: vomiting, difficulty swallowing, diarrhea, loss of appetite, headache, fainting dizziness, mental disturbances & dark urine; skin discolouration & eruptions also observed
Sensitizing:	Not a sensitizer
Carcinogen/Tumorigen:	Not known to be a tumorigen or a carcinogen in humans or animals
Reproductive Effect:	No known effect on humans or animals
Mutagen:	Not known to be a mutagen or teratogen in humans or animals
Synergistic With:	Not known
LD ₅₀ (oral):	352 – 569mg/kg (rat), 300mg/kg (mouse)
LD ₅₀ (skin):	700, 743 & 944mg/kg (rabbit), 744 & 1666mg/kg (rat), 556mg/kg (pig)
LD ₅₀ (inhalation):	46ppm (mouse), 82ppm (rat)

SECTION 12 – ECOLOGICAL INFORMATION

Bioaccumulation:	This product is readily eliminated or metabolized (biological ½-life = 13 hr) and cannot bioaccumulate
Biodegradation:	This product degrades readily and rapidly in the presence of oxygen; 39% degradation in 12 hours
Abiotic Degradation:	This product reacts with atmospheric hydroxyl (OH) radicals; its estimated half-life in air is 14-15hr
Mobility in soil, water:	This product is water soluble, does not absorb to soil & should move readily through soil and the water column; rapid biodegradation may help limit movement
Marine Toxicity	

Phenol, 90% solution

LD₅₀ (96hr, fish): 8.9-12.3mg/litre (Oncorhynchus mykiss), 11.5-50.9mg/litre (Pimephelas promelas), 47.5mg/litre (Lebistes reticulatus), 40mg/litre (Poecilia reticulata), 27.8mg/litre (Brachydanio rerio)
LD₅₀ (48hr, crustacea): 10.2-15.19mg/litre (Daphnia magna)
EC₅₀ (Algae): 370mg/litre (Chlorella vulgaris & Microcystis aeruginosa), 150mg/litre (Selenastrum capricornutum)
EC₅₀ (Bacteria) 21-40mg/litre (Photobacterium phosphoreum)

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste disposal: Do not flush to sewer; may be incinerated in approved facility with flue gas monitoring & scrubbing, mix with a suitable flammable waste before incineration

Containers: Drums should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use.

Pails must be vented and thoroughly dried prior to crushing and recycling.

IBCs (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5 years). Steel containers must be inspected, pressure tested & recertified every 5 years.

Warning: never cut, drill, weld or grind on or near this container, even if empty.

SECTION 14 – TRANSPORT INFORMATION

USA 49 CFR

Product Identification Number: UN - 2821
Shipping Name: Phenol solution
Classification: Class 6.1; Packing Group II
Label

Canada TDG

Product Identification Number: UN - 2831
Shipping Name: Phenol solutions
Classification: Class 6.1; Packing Group II
Marine Pollution: Not a marine pollutant

SECTION 15 – REGULATORY INFORMATION

Canada DSL: On inventory
U.S.A. TSCA: On inventory
Europe EINECS: On inventory

SECTION 16 – OTHER INFORMATION

Supplier MSDS Date: 02/27/2012

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MSDS ID: MI1622
HYDRITE NAME: PHENOL 90%
DATE: 01/23/2008



BLUE ISLAND PHENOL LLC

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Blue Island, IL 60406

Phone: 708-386-0071
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info@biphenol.com

PHENOL 90%

Product: US415

Revision date: 2008/01/23

Section 1 : PRODUCT AND COMPANY IDENTIFICATION

Chemical family: Not available.

Supplier: JLM Marketing, Inc.
8675 Hidden Parkway
Tampa, FL 33637
Phone: 813-632-3300
Fax: 813-632-3301.

Manufacturer emergency phone number: Chemtrec 800-424-9300 (24h).

Section 2 : INGREDIENT INFORMATION

C.A.S.	CONCENTRATION %	Ingredient Name	T.L.V.	LD/50	LC/50
108-95-2	90	PHENOL	5 PPM (SKIN)	317 MG-KG RAT ORAL 669 MG-KG RAT DERMAL 270 MG-KG MOUSE ORAL 630 MG-KG RABBIT DERMAL	316 MG-M3 RAT INHALATION 177 MG-M3 MOUSE INHALATION

Section 2A: ADDITIONAL INGREDIENT INFORMATION

Note: (supplier).
This product contains 10% water (CAS# 7732-18-5).

Section 3 : HAZARD IDENTIFICATION

Route of entry: Skin contact, eye contact, inhalation and ingestion.

Effects of acute exposure

Eye contact: May cause tearing and redness.
May cause blindness.
May cause photophobia.
May cause corneal damage.
May cause severe irritation.
May cause burns.
May cause swelling.

Skin contact: May be toxic, if absorbed through skin.
May cause skin irritation.
May cause burns.
See inhalation effects.

Inhalation: May cause coughing.
May cause coma.
May cause irritation.
May cause loss of consciousness and be fatal.
May cause damage to the respiratory system.
May cause choking sensation.
May cause breathing difficulty.
May cause convulsions.
May cause soreness of the throat.
May cause burning sensation.

Ingestion: May cause headache and nausea.
May cause burns of the mouth, esophagus and stomach.
May cause collapse.
May cause abdominal pain.
Vomiting and bloody diarrhea may result.
May cause muscle weakness and fatigue.
May be toxic.

Effects of chronic exposure: May cause nervous system damage.
May cause lung damage.
May cause dermatitis.
May cause liver and kidney damage.
Pre-existing skin and respiratory disorders may be more susceptible to the effects of exposure to this material.
May cause loss of appetite.

Carcinogenic effects: Not listed as a carcinogen.

Section 4 : FIRST AID MEASURES

Skin contact: Obtain medical attention.
Immediately flush skin with plenty of water and soap for 15 minutes while removing contaminated clothing and shoes.
Apply undiluted solution of polyethylene glycol (PEG) until treatment.

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes.
Get medical attention immediately.

Inhalation: Remove victim to fresh air. If not breathing, qualified personnel should administer artificial respiration. Get medical attention.
If breathing is difficult, administer oxygen.

Ingestion: Do not induce vomiting. Gently wipe out inside of mouth to remove any residual material. Seek immediate medical attention.
Never give anything by mouth to an unconscious person.
If conscious, give 1 or 2 glasses of water or milk.

Additional information: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any inaccuracies.

Section 5 : FIRE FIGHTING MEASURES

Flammability: Combustible.

Conditions of flammability: Vapours may travel to a source of ignition and flash back.
Heat, sparks and open flames.

Extinguishing media: Carbon dioxide, dry chemical, foam.
Water spray.

Special procedures: Self-contained breathing apparatus required.
Firefighters should wear the usual protective gear.
Use water spray to cool fire exposed containers.

Auto-ignition temperature (°C): Not available.

Flash point (°C), method: Closed Cup.
77.7

**Lower flammability
limit (% vol):** 1.7

**Upper flammability
limit (% vol):** 8.6

Explosion Data

Sensitivity to static discharge: Take precautionary measures against static discharge.

Sensitivity to mechanical impact: Not available.

Hazardous combustion products: Oxides of carbon (COx).
Nitrogen oxides (NOx).
Phenol.
Toxic fumes.

Rate of burning: Not available.

Explosive power: Not available.

Section 6 : ACCIDENTAL RELEASE MEASURES

Leak/Spill: Evacuate all non-essential personnel.
Prevent entry into drains, sewers, and other waterways.
Wear appropriate protective equipment.
Allow molten spill to solidify.
Ground handling equipment.
Stay upwind.
Ventilate. Eliminate all sources of ignition.
Flush residue with water.
Containers must be labelled.
Place in steel containers.
Neutralize with sodium hydroxide solution.

Section 7 : HANDLING AND STORAGE

Handling procedures and equipment: Avoid smoking, drinking, or eating during use.
Keep away from heat, sparks, and open flame.
Avoid breathing vapors/mists.
Use adequate ventilation.
Wash thoroughly after handling.
Discard contaminated shoes and leather articles.
Use proper grounding procedures.
Avoid contact with skin, eyes and clothing.
Wear suitable protective clothing.
Launder contaminated clothing prior to reuse.

Storage requirements: Store away from incompatible materials.
Keep containers closed when not in use.
Keep away from ignition sources.
Store away from acids and oxidizing materials.
Outside or detached storage is preferable.
Store in a cool, dry and well ventilated area.

Section 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION

Precautionary Measures

Gloves/Type:



Neoprene gloves.
Vinyl gloves.
Polyethylene gloves.
Viton gloves are recommended.

Respiratory/Type:



NIOSH approved respirator for vapours and mists.

Eye/Type:



Splash proof chemical goggles and 8" face shield.

Footwear/Type: Safety shoes per local regulations.

Clothing/Type: As required to prevent skin contact.

Other/Type: Eye wash facility should be in close proximity.
Emergency shower should be in close proximity.

Ventilation requirements: Local exhaust at points of emission.
General dilution ventilation.

Exposure limit of material: See hazardous ingredients section.

Section 9 : PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid.

Appearance & odor: Sweet odour.
Characteristic aromatic odor.
Colourless to pink solution.

Odor threshold (ppm): 0.05 ppm

Vapour pressure (mmHg): 16.55

Vapour density (air=1): (air=1).
1.43

Volatiles (%)

By volume: Not available.

Evaporation rate
(butyl acetate = 1): <0.1

Boiling point (°C): 100
pH: 5.3
Specific gravity @ 20 °C: 1.02
Solubility in water (%): 100
Coefficient of water:oil dist.: Not applicable.
Melting point (°C): -4.0

Section 10 : STABILITY AND REACTIVITY

Chemical stability: Stable under normal conditions.
Conditions of instability: Avoid excessive heat, sparks and open flames.
Hazardous polymerization: Will not occur.
Incompatible substances: Aluminum (Al).
Magnesium.
Calcium hypochlorite.
Zinc (Zn).
Sodium nitrate.
Copper (Cu).
Iron (Fe).
Strong oxidizers.
Lead (Pb).
Boron
Peroxyformic acid.
Trifluoride.
(concentrated nitric acid and sulfuric acid).
1,3-butadiene.
Diethyl ether.
Peroxymonosulfuric acid.
Hazardous decomposition products: See hazardous combustion products.

Section 11 : TOXICOLOGICAL INFORMATION

LD50 of product, species & route: See hazardous ingredients section.
LC50 of product, species & route: See hazardous ingredients section.
Sensitization to product: Not available.
Reproductive effects: May affect reproductive system.
Teratogenicity: Not available.
Mutagenicity: Not available.
Synergistic materials: Not available.

Section 12 : ECOLOGICAL INFORMATION

Environmental toxicity: May be toxic to aquatic life.
Environmental fate: May be harmful to the environment.

Section 13 : DISPOSAL CONSIDERATIONS

Waste disposal: In accordance with municipal, provincial and federal regulations.

Section 14 : TRANSPORT INFORMATION

D.O.T. CLASSIFICATION: PHENOL SOLUTION
UN2821
Class 6.1
PG II.



Special shipping information: See transportation information.

Section 15 : REGULATORY INFORMATION

TSCA inventory: The substance(s) which appear in section 2. with CAS numbers, appear on the TSCA inventory list. Balance to be determined.

SARA Section 313: Phenol (108-95-2).

SARA hazard categories sections Immediate (Acute) Health Hazard: Yes.

311/312: Delayed (Chronic) Health Hazard: Yes.

Fire Hazard: Yes.

Reactive: No.

CERCLA reportable quantity: Phenol (108-95-2) - 1000 lbs.

NEPA

Health Hazard: 3

Flammability: 2

Physical hazard: 0

Specific Hazard: Corrosive.

CA Proposition 65: This product contains a chemical known to the State of California to cause cancer or birth defects or other reproductive harm.

Section 16 : OTHER INFORMATION

Data prepared by: Conform-Action Data Systems
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