Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION
Trade name PH40
Synonyms Phenol
MSDS and Product Information (8:00am-4:30pm CST) (713) 428 5400
Health and Safety Information (8:00am-4:00pm CST) (713) 428 5400

SECTION 2 COMPOSITION AND INFORMATION ON INGREDIENTS
Components CAS-No. Weight %
Phenol 108-95-2 100
See Section 8 for Exposure Guidelines and Section 15 for Regulatory Classifications.

SECTION 3 HAZARDS IDENTIFICATION
EMERGENCY OVERVIEW
Appearance White to amber liquid or crystalline solid
Odor Antiseptic
Precautions DANGER! CAUSES SEVERE BURNS. COMBUSTIBLE LIQUID Harmful if inhaled.
Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling.
Environmental precautions Prevent further leakage or spillage if safe to do so. Do not contaminate any lakes, streams, ponds, groundwater or soil.
POTENTIAL HEALTH EFFECTS
Eyes Contact can cause severe irritation and burns of the eyes with possible permanent damage.
Skin Rapidly absorbed through skin. Causes severe burns which may not be immediately painful or visible. Absorption through skin can cause massive intravascular hemolysis, rapid heartbeat, respiratory depression, kidney injury, liver damage and death.
Inhalation Inhalation of vapors is irritating to the respiratory system, may cause throat pain and cough.
Ingestion Harmful or fatal if swallowed. Ingestion causes burns of the upper digestive and respiratory tracts. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Higher exposure may cause lung edema, circulatory collapse and unconsciousness. If swallowed can cause transient CNS stimulation followed by CNS depression
Target Organs Lungs, Kidney, Liver, Central nervous system, Heart, Pancreas, Spleen,
Additional advice Rapid absorption and severe systemic toxicity can occur after any route of exposure.
Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
(See Section 11 for Toxicological Information)

SECTION 4 FIRST AID MEASURES
Eye contact Danger of very serious irreversible effects. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Obtain medical attention.
Skin contact  Take off contaminated clothing and shoes immediately. If possible, quickly blot material from skin to avoid spreading it. Rapid skin decontamination is critical. Wash off immediately with plenty of water. Wash off with polyethylene glycol and afterwards with plenty of water. Apply PEG/EtOH solution liberally to affected area. Allow to remain 15 to 30 seconds, then wash with water. Continue cycle of water - PEG/EtOH solution for at least 15 minutes. (PEG/EtOH solution consists of 2 parts polyethylene glycol 400 to 1 part ethanol. For external use only.) Wash off with soap and water. Obtain medical attention. Wash contaminated clothing before re-use.

Inhalation  Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. If breathing is difficult, give oxygen. Keep patient warm and at rest. Obtain medical attention.

Ingestion  If accidentally swallowed obtain immediate medical attention. Immediately give plenty of water (if possible charcoal slurry). Do NOT induce vomiting.

Additional advice  There is no specific antidote. Treatment consists of support of respiratory and cardiovascular functions.

SECTION 5 FIRE FIGHTING MEASURES
FLAMMABLE PROPERTIES
Flash point  79 °C 174 °F
PH40
Autoignition temperature  715 °C 1,319 °F
Flammable limits in air % by volume
Lower explosion limit: 1.7 %(V)
Upper explosion limit: 8.6 %(V)
Fire and explosion  Fire or intense heat may cause violent rupture of packages. Material will burn in a fire.
Extinguishing media  Water spray or fog, foam, dry chemical, CO2. Do NOT use water jet.
Fire fighting instructions  Wear self-contained breathing apparatus and protective suit.
Further information  Evacuate personnel to safe areas. Stop source of fuel if possible. Keep containers and surroundings cool with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Avoid contact with runoff water. Potential hazard exists from Cresylic acid vapors carried downwind.

SECTION 6 ACCIDENTAL RELEASE MEASURES
Steps to be taken in case of spill or leak  Evacuate the area and eliminate all sources of ignition. Only properly trained personnel should respond to spills or leaks. Use personal protective equipment. Land spill: Contain spilled liquid with sand, absorbent material, or concrete dikes for recovery or disposal. Do not flush into surface water or sanitary sewer system. Soak up with inert absorbent material and dispose of as hazardous waste. Water spill: Contain spill with booms. Remove material that settles in deeper areas of waterway. Cresylic acids tend to sink in fresh water and float in concentrated brine. Non-disposable equipment should be thoroughly decontaminated with soap and water. Prevent further leakage or spillage if safe to do so. Do not contaminate any lakes, streams, ponds, groundwater or soil.
Reporting Requirements
Composition and extent of any spill should be evaluated against local regulations and reported to the proper agencies, if necessary.

SECTION 7 HANDLING AND STORAGE

Safe handling advice
Use only in well-ventilated areas. Use only in an area equipped with a safety shower. Handle and open container with care. Do not use pressure to empty drums. Heat only in areas with appropriate exhaust ventilation. Drums should be vented during melting and unloading. Transfer lines and vents should be heated when working with freezable material to avoid pressure differences due to blockages. Vapors should be routed through an appropriate scrubber or flare to avoid release to the atmosphere. Avoid overheating as it may lead to excessive vapors, discoloration, and spillage caused by thermal expansion.

Storage and handling

materials
Suitable: TANKS: carbon steel stainless steel
Unsuitable: Avoid use of aluminum, copper or brass alloys in storage or process equipment which will contact this material

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Shelf life
Keep container tightly closed in a dry and well-ventilated place. Keep away from food, drink and animal feeding stuffs. Keep away from sources of ignition - No smoking. Inert gas blanket and breathing system needed to maintain color stability.

Further information on storage conditions

Corrosive. Hygroscopic. May exhibit supercooling and crystallize rapidly when seeded or subjected to physical shock.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING MEASURES
Provide adequate ventilation. Mechanical ventilation may be necessary if working with this product in enclosed areas and/or at elevated temperatures. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

PERSONAL PROTECTIVE EQUIPMENT

Eyes
When contact with liquid is possible, use a face shield and/or chemical splash goggles. Otherwise use safety glasses with side shields or goggles.

Skin
Full protective clothing, chemical boots, and chemical gloves. Heavy PVC or butyl-viton gloves are recommended. Non-disposable equipment should be thoroughly decontaminated with soap and water.

Inhalation
NIOSH-approved organic vapor air-purifying respirator, self-contained breathing apparatus, or air-supplied respirators where there may be potential for overexposure.

EXPOSURE GUIDELINES
Components Exposure limit(s)

Phenol
OSHA PEL 5 ppm
ACGIH TLV (8-hour) 5 ppm
Naphthalene OSHA PEL 10 ppm
ACGIH TLV (8-hour) 10 ppm
ACGIH STEL 15 ppm

PEL= Permissible Exposure Limits TWA= Time Weighted Average (8 hr.)
TLV= Threshold Limit Value STEL= Short Term Exposure Limit (15 min.)
EL= Excursion Limit WEEL= Workplace Environmental Exposure Level

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES
Appearance
liquid or crystalline solid
Color
White to amber
Odor
Antiseptic

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Form
liquid or crystalline solid

**Boiling point/range**
182 °C 360 °F

**Vapor pressure**
0.35 mm Hg @ 25 °C

**Vapor density**
3.24

**Solubility (water)**
80 g/l @ 25°C

**Viscosity, dynamic**
3 mPa.s @ 50 °C

**Melting point/range**
40 °C 104 °F

**Density**
1.05 g/cm³ @ 45 °C

**pH**
5.5

**LogKow** 1.46

**SECTION 10 STABILITY AND REACTIVITY**

**Conditions to avoid**
Stable under normal conditions.

**Hazardous decomposition products**
Combustion products include carbon dioxide, carbon monoxide and possibly other unidentified organic compounds.

**Incompatibility with other materials**
strong oxidizing agents

**Hazardous polymerization**
Hazardous polymerization does not occur.

**SECTION 11 TOXICOLOGICAL INFORMATION**

**Additional Remarks**
Phenol
Absorption through skin can cause massive intravascular hemolysis, rapid heartbeat, respiratory depression, kidney injury, liver damage and death. Chronic absorption via any route may result in bluish or brownish discoloration of the tendons (carbolochronosis).

**Eyes**
Phenol Corrosive to eyes.

**Skin**
Phenol Acute dermal LD50 (rabbit): 850 - 1,400 mg/kg

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**Inhalation**
Phenol Acute LC50 (rat): 0.31 mg/l
Repeated inhalation at high concentrations may cause damage to lung, heart, liver and kidneys, sensitivity to light and death.

**Ingestion**

*Phenol* Acute oral LD50 (rat): 530 mg/kg
If swallowed can cause death.

**Carcinogenicity**

*Phenol* This chemical is not listed for carcinogenicity by IARC, NTP or OSHA.

**SECTION 12 ECOLOGICAL INFORMATION**

**Aquatic toxicity**

*Phenol* LC50 (Fish): 96 hours 5.7 - 56 mg/l
LC50 (*Daphnia magna*): 21 - 100 mg/l

**SECTION 13 DISPOSAL CONSIDERATIONS**

**Disposal methods**

Dispose of only in accordance with local, state, and federal regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

**Empty containers**

Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, triple-rinsed, properly bunged and promptly returned to a drum reconditioner, or properly disposed.

**SECTION 14 TRANSPORT INFORMATION**

**DOT description** RQ, Phenol, molten, 6.1, UN 2312, II

**IATA description**

 Phenol, solid, 6.1, UN1671, II
 Phenol, molten, 6.1, UN 2312, II
 Phenol, solid, 6.1, UN1671, II

**IMDG Description**

 Phenol, molten, 6.1, UN 2312, II
 Phenol, solid, 6.1, UN1671, II

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**SECTION 15 REGULATORY INFORMATION**

**U.S. FEDERAL REGULATIONS**

**OSHA classification**

Toxic, Corrosive., Combustible liquid.

**TSCA Inventory Listing**

Components CAS-No.
Phenol 108-95-2

**SARA 302 Status**

Components CAS-No. Weight %
Contains no chemicals subject to SARA 302 reporting.

**S**

**ARA 311/312 Classification**

"Immediate (acute) health hazard", "Delayed (chronic) health hazard", "Fire hazard"

**S**

**ARA 313 Chemical**

Components CAS-No. Weight %
Phenol 108-95-2 100
Naphthalene 91-20-3 0

**CERCLA Hazardous Substance**

Components CERCLA RQ Weight %
Phenol 1,000 LB 100
Naphthalene 100 LB 0
INTERNATIONAL REGULATIONS
Workplace Hazardous Materials Information System (WHMIS) Classification
Combustible Liquid
Very Toxic Material Causing Immediate and Serious Toxic Effects
Very Toxic Material Causing Other Toxic Effects
Corrosive Material
Australian Inventory of Chemical Substances (AICS) Listing
Listed on the AICS.
Japanese Minister of International Trade and Industry (MITI) Inventory Listing
Listed on MITI.

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Canadian Domestic Substance List (DSL) Inventory Listing
Listed on the DSL.

European Inventory of Existing Commercial Chemical Substances (EINECS) Listing
Listed on EINECS.

Philippines Inventory List (PICCS)
Listed on PICCS.

Korean Inventory List
Listed on the ECL.

China Inventory List
Listed on the China inventory.

STATE REGULATIONS
California Safe Drinking Water Act (Prop 65) Listing
Components CAS-No.
Naphthalene
91-20-3
This product may contain residual amounts of Naphthalene at concentrations typically from less than 10 ppm to 0.9%. MERISOL does not analyze specifically for Proposition 65 listed chemicals; however, through process knowledge, the following components may be present at concentrations of less than 100 ppm:
Toluene, Aniline, o-Toluidine, 2,6-Xylidine. Merisol’s manufacturing process is intended to minimize impurities which would include these potential components.

SECTION 16 OTHER INFORMATION
HAZARD RATINGS
Health Flammability Reactivity
NFPA 4 2 0
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### Phenol-90% Solution

<table>
<thead>
<tr>
<th>Property</th>
<th>Sales Specifications</th>
<th>Test Method</th>
</tr>
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<tbody>
<tr>
<td>Appearance (Molten State)</td>
<td>Clear water white liquid</td>
<td>Visual</td>
</tr>
<tr>
<td>Color, APHA</td>
<td>20 Max **</td>
<td>D1686-96 (2003)el</td>
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<tr>
<td>Solidification Point, degree C</td>
<td>40.6 Min **</td>
<td>D1493-97</td>
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<tr>
<td>Purity, Wt. %</td>
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<td>D6142</td>
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<tr>
<td>Water, Wt. %</td>
<td>10%, +/-, 0.5% *</td>
<td>D1631-99</td>
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Note: Test Method listed is the ASTM test method. Sunoco utilizes proprietary test methods that are equivalent, or superior to, the listed ASTM method.

* At time of shipment

** Phenol specification prior to addition of water.

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Supersedes Date: 03/21/2002

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