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Issue Date: 09/01/93

I. Identification

Product Name: Phenol
Common Name: Carbohic Acid; Hydroxybenzene
Formula: C₆H₅OH

II. Ingredients and Recommended Occupational Exposure Limits

Componet: Phenol
% WT.: Approx. 100
CAS NO.: 108-95-2
OSHA-PEL: TWA-5 ppm (skin)
ACGIH-TLV: TWA-5ppm (skin)
Oral Ldee: 317 mg/kg (rat)
Dermal Ldee: 850 mg/kg (rabbit)

HAZARD DATA:

DANGER! Poison, compustible, corrosive. Causes severe skin and eye burns. Skin absorption can cause systemic toxicity which may be fatal. Inhalation may cause respiratory damage.

INGREDIENT HAZARD INFORMATION:

Phenol is identified as a SARA Section 313 chemical.

III. Physical Data

Boiling Point(°C): 181
Melting Point: 40.9(C°)
Vapor Pressure (mm Hg.)@ 71°C: -10.3
Vapor Density (Air=1): 3.24
Specific Gravity (H₂O-1)@25°C: 1.071
Evaporation Rate (n-BuAc=1.0): <0.1slow(est.)
pH: <6.0
Solubility in water 100 ml@16°C: 6.7
Appearance and odor: Colorless to light pink solid; Characteristic sweet odor.

IV. Fire and Explosion Hazard Data

Flash Point (method used): 172°F (closed cup)
Flammable Limits:
Lel: 1.5% Uel: 8.6%

EXTINGUISHING MEDIA:

Alcohol foam, carbondioxide, dry chemical.

SPECIAL FIRE FIGHTING PROCEDURES:

Use water spray to keep exposed containers cool. Self-contained breathing apparatus, impervious suit and goggles required.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Yields flammable vapors when heated. Note: Water containing phenol can cause severe chemical burns.

V. Reactivity Data

Stability: Stable
Conditions to avoid: Heat.

INCOMPATIBILITY(Materials to avoid):

Attacks copper, aluminum, magnesium, lead, zinc, iron and their alloys, calcium hydrochlorite and other strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS:

Phenol vapors are toxic and corrosive. Carbon monoxide and carbon dioxide.

Polymerization: Will not occur
Conditions to Avoid: None Known.

VI. Spill or Leak Procedures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Remove all sources of heat and ignition. Ventillate the area. Absorb small spills with vermicullite or other inert absorbent materials. For large spills, contain by diking and allow to solidify. Prevent entry into sewers and waterways. Shovel solid into steel containers for disposal. Flush spill area flooding quantities of water, then use sodium hydroxide solution for neutralization. Collect flushing and waste water for disposal. Emergency spills must be reported t to the National Response Center.

In case of release to the environment, report spills to 800-424-8802, The National Response Center.

WASTE DISPOSAL METHOD:

Dispose of in accordance with local, state and federal regulations.

VIII. Health Hazard Data

Major exposure hazard: inhalation, eye contact and skin contact.

EFFECTS OF OVEREXPOSURE:

Phenol absorption can occur vis inhalation, skin contact, or injestion. Phenol has a corrosive effect to all body tissues and systemic absorption can cause convulsions, as well as liver, and kindey damage and possibly death.

INHALATION:

Phenol vapors can be irritating and damaging to the respiratory passages and lungs.

EYE CONTACT:

Severely irritating, permanent corneal damage and blindness may occur.

INGESTION:

Causes severe burns of the mouth and throat, abdominal pain, headache, muscular weakness, nausea, collapse, coma, and death.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Individuals with chronic respiratory disorders may be adversely affected by any fume or airbourne particulate matter exposure. Persons with preexisiting skin disorder may be more susceptible to the effects of this material. Individuals with a history of convulsive disorders or abnormalities of the liver or kidneys may be at incresed risk from exposure.

CARCINOGENICITY: Not applicable

OTHER COMMENTS:

Chronic Toxicity: Chronic Phenol poisoning in industry is rare. Symptoms have included vomiting, difficult swallowing, loss of appetite, dermatitis, dark urine, discolored skin, general weakness, loss of body weight, enlarged liver and kidney damage. NIOSH(No. 78-196, 1976) indicates that Phenol is a non-specific irritant capable of promoting skin tumors, but is not a specific carcinogen or mutagen.

VIII. Emergency and First Aid Procedures

INHALATION:

Remove from exposure. If breathing has stopped or is difficult, administer artificial respiration (mouth to mouth) or oxygen as indicated. Call a physician immediately.

SKIN CONTACT:

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 wiped on the skin. Call a physician immediately. Properly dispose of all contaminated clothing and leather, avoiding additional skin contact.

EYE CONTACT:

Flush with large amounts of water for at least 15 minutes. Call a physician immediately.

INGESTION:

Immediately seek medical aid. Transport victim to a hospital emergency room. **DO NOT INDUCE VOMITTING.** Give 1 or 2 glasses of milk or water to the victim if conscious and alert. Wipe material from mouth and lips. Never give anything by mouth to an unconscious person.

IX. Special Protection Information

RESPIRATORY:

Respiratory protection approved by NIOSH/MSHA for protection against organic vapors should be used to avoid inhalation of excessive concentrations. Appropriate respirator selection depends on the type and magnitude of exposure.

SKIN:

Chemical resistant materials used should be selected on the use of phenol. Viton, neoprene, vinyl and polyethylene protective garments have been suggested for protection against phenol. Contaminated clothing should be removed and laundered before reuse.

EYE:

Employees should be required to wear chemical safety glasses to prevent eye contact. A faceshield should be used to prevent contact with splashed material. Avoid wearing contact lenses.

VENTILATION:

Local exhaust ventilation should be used to control the emission of air contaminants. General dilution ventilation may assist with the reduction of air contaminant concentrations.

OTHER PROTECTIVE EQUIPMENT:

Eyewash stations and deluge safety showers should be available in the work area, away from sources of ignition and heat.

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Top inloading of cars and trucks is advised. Do not allow untrained workers to handle phenol. Store in well ventilated area. Outside storage is preferred. Do not eat or smoke in areas where phenol is being handled. Provide preplacement and periodic examinations to workers exposed to phenol.

X. Regulatory Status

TSCA STATUS:

This product (or its ingredients if it is a mixture) appears on the Toxic Substances Control Act Inventory (TSCA).

SARA Hazard Categories (Section 311 and Section 312): Immediate Health, Delayed Health and Fire.

SARA Section 313: See section II, Ingredient Hazard Information.

DOT Shipping Name: Phenol, Molten

DOT Hazard Class: 6.1

Identification Number: UN 2312

Packing Group: II

HMIS Ratings (Hazardous Materials Identification System, Scale 0-4):

Health: 3

Flammability: 2

Reactivity: 0

NFPA Ratings (National Fire Association, Scale 0-4)

Health: 3

Flammability: 2

Reactivity: 0
