MATERIAL SAFETY DATA SHEET

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MSDS No. PP 115
Effective Date April 8, 1999

SECTION I NAME

24 HOUR EMERGENCY ASSISTANCE

CHEMTREC **800-424-9300**
Day 716-226-6177

Product	PHENOL, CRYSTALS
Chemical Synonyms	Carbolic Acid
Formula	C_6H_5OH
Unit Size	up to 2.5 Kg.
C.A.S. No.	108-95-2

NFPA HAZARD RATING

Health	3
Fire	2
Reactivity	1

HMIS *

LEAST	SLIGHT	MODERATE	HIGH	EXTREME
0	1	2	3	4

SECTION II INGREDIENTS OF MIXTURES

Principal Component(s)	%	TLV Units
Phenol, Crystals	100%	See Section V.
DANGER! POISON  **CORROSIVE! MAY BE FATAL**		
IF SWALLOWED OR ABSORBED THROUGH SKIN. CAUSES SEVERE		
SKIN AND EYE BURNS. COMBUSTIBLE. HAZARDOUS SOLID.		

SECTION III PHYSICAL DATA

Melting Point (°F)	Congeals at 41°C; MP 43°C	Specific Gravity (H_2O = 1)	1.071 @ 25/4°C
Boiling Point (°F)	181°C (358°F)	Percent Volatile by Volume (%)	100% at 100°C
Vapor Pressure (mm Hg)	~ 10.3 at 71°C	Evaporation Rate (n-Butyl Ac. =1)	Less than 0.03
Vapor Density (Air=1)	3.24		
Solubility in Water	6.7 grams per 100 mL. water at 16°C.		
Appearance & Odor	This material can be liquid or solid, depending on storage temperature. Colorless to light pink solid, darkens on exposure to light; characteristic odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	175°F (79°C) (cc)	Flammable Limits in Air % by Volume	Lower	Upper
		Phenol	1.5	8.6
Extinguisher Media	Use water spray; carbon dioxide (CO_2); dry chemical (ABC); foam.			

SPECIAL FIREFIGHTING PROCEDURES

In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective clothing including eye protection. Avoid skin and eye contact; extremely corrosive to all body tissue. Avoid splashing personnel with phenol. Water containing phenol can cause severe chemical burns.

(1996 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.7, GUIDE PAGE NO. 153)

UNUSUAL FIRE AND EXPLOSION HAZARDS

Yields flammable vapors when heated, which will form explosive mixtures with air. Phenol discolors above 50°C. Vapors are flammable and toxic.

Ignition Temperature: 1319°F (715°C).

D.O.T. **PHENOL, SOLID, 6.1, UN 1671, PG II**

Approved by U.S. Department of Labor "essentially similar" to form OSHA-20

SECTION V HEALTH HAZARD DATA

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Threshold Limited Value

Toxicity: oral-rat LD50: 317 mg/kg. (Skin Values) TWA 5 ppm; 19 mg/m^3 (ACGIH 1992-93).

Effects of Overexposure

INHALATION: In animals, prolonged inhalation of vapors (30-60 ppm) has induced respiratory difficulties, lung damage, loss of weight and paralysis. Breathing of phenol vapors can cause irritation of the mucous membranes. **INGESTION:** Ingestion of phenol causes intense burning of mouth and throat followed by marked abdominal pain and distress. Lethal oral doses of phenol for adults have ranged from 1 to 10 gm; for infants 50 to 500 mg. Cyanosis, muscular weakness and collapse may occur within a few minutes after ingestion. Tremors and convulsions are occasionally observed. **SKIN:** Phenol is rapidly absorbed through the skin. A serious burn or poisoning through skin absorption may occur if the chemical is not removed promptly and thoroughly. If the phenol is left on the skin the exposed area will burn. **EYES:** Exerts a strong corrosive action. May cause corneal damage or blindness.

TARGET ORGANS AFFECTED: Kidneys, liver, respiratory system, lungs, heart.

Emergency and First Aid Procedures

Speed in removing phenol is of primary importance. **INGESTION:** If swallowed, do **NOT** induce vomiting without specific instructions from physician. Get immediate medical attention. Keep victim warm and quiet. Never give anything by mouth to an unconscious person. **SKIN:** Flush thoroughly with water while removing contaminated clothing and shoes. **EYES:** Flush thoroughly with water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get immediate medical attention. **INHALATION:** Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration administered by trained personnel. Get immediate medical attention.

SECTION VI REACTIVITY DATA

Stability			**Conditions to Avoid**
	Unstable		Excessive temperatures and heat.
	Stable	X	

Incompatibility (Materials to Avoid)

Avoid contact with strong oxidizers, halogens and calcium hypochlorite. Hot phenol attacks aluminum, lead, magnesium and zinc and the phenol is discolored. The discoloration of phenol is catalyzed by iron and copper.

Hazardous Decomposition Products

Complete combustion results in the formation of carbon dioxide and water vapor; incomplete combustion can yield carbon monoxide. Avoid breathing vapors or gases released on exposure to high temperature or fire.

Hazardous Polymerization		**Conditions to Avoid**
May Occur	**Will Not Occur**	Not applicable.
	X	

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled

Allow only trained and protected personnel in area. Wearing proper protective equipment and with good ventilation, remove all sources of ignition. Scoop up or if liquid, absorb in sand, earth, sawdust, vermiculite. Place in steel containers. Wash spill area well with soap and water.

Waste Disposal Method

Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only.

Dispose of in an approved incinerator or contract with a licensed waste disposal service.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiration Protection (Specify Type) Use in a well-ventilated area. Work in fume hood. If necessary use a NIOSH/MSHA-approved special cartridge respirator.

Ventilation				
	Local Exhaust	Recommended.	**Special**	No.
	Mechanical (General)	Recommended.	**Other**	No.

Protective Gloves	Neoprene.	**Eye Protection**	Splash proof goggles.

Other Protective Equipment Smock, apron, eye wash station, ventilation hood, proper gloves, fire extinguisher. Face shields may be worn in addition to safety goggles.

SECTION IX SPECIAL PRECAUTIONS

Precautions to be Taken in Handling & Storing

Keep container tightly closed when not in use.

See Section V above. Do not handle with bare hands. Store in a cool, dry well-ventilated place away from fire hazards and protect from light. Wash thoroughly after handling.

Other Precautions

Read label on container before using. Do not wear contact lenses when working with chemicals.

Distill only under inert atmosphere. Threshold (Odor) is 0.3 ppm. White crystalline mass turns pink or red if not perfectly pure. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing and equipment before reuse.

For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

Revision No. 5	Date 4/8/99	Approved Michael Raszeja	Chemical Safety Coordinator MR