Fisher Scientific

Part of Thermo Fisher Scientific

Material Safety Data Sheet

Creation Date 21-Dec-2010 **Revision Date** 21-Dec-2010 **Revision Number** 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name **Phenol Liquid**

Cat No. **A88I-500; A931I-1; A931I-4; A931I-200; A931I-500**

Synonyms Carbolic acid; Phenyl hydroxide; Hydroxybenzene (USP/Certified)

Recommended Use Laboratory chemicals

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview

Combustible liquid. May be fatal if absorbed through skin or swallowed. Toxic by inhalation. Causes burns by all exposure routes. May cause central nervous system effects. Possible risks of irreversible effects. Danger of serious damage to health by prolonged exposure.

Appearance Colorless **Physical State** Liquid **odor** sweet

Target Organs Respiratory system, Eyes, Skin, Gastrointestinal tract (GI), Central nervous system (CNS), Liver, Kidney

Potential Health Effects

Acute Effects
Principle Routes of Exposure

Eyes	Causes burns.
Skin	Toxic in contact with skin. May be fatal if absorbed through skin. Causes burns.
Inhalation	Toxic by inhalation. Causes burns. Inhalation may cause central nervous system effects.
Ingestion	May be fatal if swallowed. May cause central nervous system effects. Causes burns.

Chronic Effects None known

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions Preexisting eye disorders. Kidney disorders. Liver disorders. Skin disorders.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	CAS-No	Weight %
Phenol	108-95-2	89
Water	7732-18-5	11
Oxalic acid dihydrate	6153-56-6	0.01

4. FIRST AID MEASURES

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.

Ingestion Do not induce vomiting. Call a physician or Poison Control Center immediately.

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point 79.4°C / 174.9°F

Method No information available.

Autoignition Temperature 715°C / 1319°F

Explosion Limits
Upper 8.6 vol %
Lower 1.8 vol %

Suitable Extinguishing Media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media No information available.

Hazardous Combustion Products No information available.

Sensitivity to mechanical impact No information available.
Sensitivity to static discharge No information available.

Specific Hazards Arising from the Chemical
Containers may explode when heated. Keep product and empty container away from heat and sources of ignition.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA **Health** 4 **Flammability** 2 **Instability** 0 **Physical hazards** N/A

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Use personal protective equipment. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Do not get in eyes, on skin, or on clothing.

Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Up Remove all sources of ignition. Soak up with inert absorbent material. Keep in suitable and closed containers for disposal.

7. HANDLING AND STORAGE

Handling Use only under a chemical fume hood. Keep away from open flames, hot surfaces and sources of ignition. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Corrosives area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Phenol	TWA: 5 ppm Skin	(Vacated) TWA: 5 ppm (Vacated) TWA: 19 mg/m^3 Skin TWA: 5 ppm TWA: 19 mg/m^3	IDLH: 250 ppm TWA: 5 ppm TWA: 19 mg/m^3 Ceiling: 60 mg/m^3 Ceiling: 15.6 ppm

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Phenol	TWA: 19 mg/m^3 TWA: 5 ppm Skin	TWA: 19 mg/m^3 TWA: 5 ppm STEL: 10 ppm STEL: 38 mg/m^3	TWA: 19 mg/m^3 TWA: 5 ppm Skin

NIOSH IDLH: *Immediately Dangerous to Life or Health*

Personal Protective Equipment

Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure
Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Colorless
odor	sweet
Odor Threshold	No information available.
pH	6
Vapor Pressure	.35 mmHg @ 25 °C
Vapor Density	3.2
Viscosity	No information available.
Boiling Point/Range	182°C / 359.6°F
Melting Point/Range	42.8°C / 109°F
Decomposition temperature	No information available.
Flash Point	79.4°C / 174.9°F
Evaporation Rate	(Butyl Acetate = 1.0)
Specific Gravity	1.0576
Solubility	Slightly soluble in water
log Pow	No data available
Molecular Weight	94.1
Molecular Formula	C6H5OH

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products. Heat, flames and sparks.
Incompatible Materials	Oxidizing agents, Reducing agents, Strong acids
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO_2), Ketones
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions .	None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation

Phenol	317 mg/kg (Rat)	525 mg/kg (Rat) 630 mg/kg (Rabbit)	316 mg/m^3 (Rat) 4 h
Water	90 mL/kg (Rat)	Not listed	Not listed

Irritation Causes burns by all exposure routes

Toxicologically Synergistic Products No information available.

Chronic Toxicity

Carcinogenicity There are no known carcinogenic chemicals in this product

Component	ACGIH	IARC	NTP	OSHA	Mexico
Phenol	Not listed	group 3	Not listed	Not listed	Not listed

IARC: (International Agency for Research on Cancer)
IARC: (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans

Sensitization No information available.

Mutagenic Effects No information available.

Reproductive Effects Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental Effects Developmental effects have occurred in experimental animals.

Teratogenicity Teratogenic effects have occurred in experimental animals..

Other Adverse Effects Tumorigenic effects have been reported in experimental animals.. See actual entry in RTECS for complete information.

Endocrine Disruptor Information No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Phenol	187 - 279 mg/L EC50 72 h 0.0188 - 0.1044 mg/L EC50 96 h 46.42 mg/L EC50 = 96 h	5.449-6.789 mg/L LC50 96 h 7.5-14 mg/L LC50 96 h 0.00175 mg/L LC50 96 h 5.0-12.0 mg/L LC50 96 h 4.23-7.49 mg/L LC50 96 h 34.09-47.64 mg/L LC50 96 h 33.9-43.3 mg/L LC50 96 h 23.4-36.6 mg/L LC50 96 h 20.5-25.6 mg/L LC50 96 h 11.9-50.5 mg/L LC50 96 h 11.9-25.3 mg/L LC50 96 h 32 mg/L LC50 96 h 31 mg/L LC50 96 h 11.5 mg/L LC50 96 h 13.5 mg/L LC50 96 h 27.8 mg/L LC50 96 h	EC50 21 - 36 mg/L 30 min EC50 = 23.28 mg/L 5 min EC50 = 25.61 mg/L 15 min EC50 = 28.8 mg/L 5 min EC50 = 31.6 mg/L 15 min	10.2 - 15.5 mg/L EC50 48 h 4.24 - 10.7 mg/L EC50 48 h

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available

Mobility .

Component	log Pow
Phenol	1.47
Water	-1.87

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Phenol - 108-95-2	U188	-

14. TRANSPORT INFORMATION

DOT

UN-No UN2821
Proper Shipping Name PHENOL SOLUTIONS
Hazard Class 6.1
Packing Group II

TDG

UN-No UN2821
Proper Shipping Name PHENOL SOLUTIONS
Hazard Class 6.1
Packing Group II

IATA

14. TRANSPORT INFORMATION

UN-No UN2821
Proper Shipping Name PHENOL SOLUTIONS
Hazard Class 6.1
Packing Group II

IMDG/IMO

UN-No UN2821
Proper Shipping Name PHENOL SOLUTIONS
Hazard Class 6.1
Packing Group II

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Phenol	X	X	-	203-632-7	-		X	X	X	X	KE-28209 X
Water	X	X	-	231-791-2	-		X	-	X	X	X
Oxalic acid dihydrate	-	-	-	-	-		X	-	X	X	-

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Phenol	108-95-2	89	1.0

SARA 311/312 Hazardous Categorization
Acute Health Hazard Yes

Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Phenol	X	1000 lb	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Phenol	X		-

OSHA
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Phenol	1000 lb	1000 lb

California Proposition 65
This product does not contain any Proposition 65 chemicals.

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Phenol	X	X	X	X	X
Oxalic acid dihydrate	-	-	X	-	X

U.S. Department of Transportation

Reportable Quantity (RQ):	Y
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade Moderate risk, Grade 2

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
B3 Combustible liquid
D1A Very toxic materials
E Corrosive material

16. OTHER INFORMATION

Prepared By	Regulatory Affairs Thermo Fisher Scientific Tel: (412) 490-8929
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Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS