

O-CRESOL

CRO

CAUTIONARY RESPONSE INFORMATION

Common Synonyms 2-Cresol o-Hydroxytoluene 2-Methylphenol o-Toluid	Solid crystals or liquid Colorless to yellow Sweet tarry odor Sinks and mixes slowly with water.
<p>Keep people away. Avoid contact with liquid and solid. Avoid inhalation. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Shut off ignition sources and call fire department. Notify local health and pollution control agencies. Protect water intakes.</p>	
Fire	<p>COMBUSTIBLE POISONOUS GASES MAY BE PRODUCED IN FIRE. Wear goggles and self-contained breathing apparatus. Extinguish with water fog, dry chemical, foam or carbon dioxide. Cool exposed containers with water.</p>
Exposure	<p>CALL FOR MEDICAL AID. LIQUID OR SOLID Will burn skin and eyes. Poisonous if swallowed, inhaled or if skin is exposed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED, and victim is CONSCIOUS, have victim drink water or milk and have victim induce vomiting.</p>
Water Pollution	<p>HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.</p>

1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse
Stop discharge
Contain
Collection Systems: Pump; Dredge
Chemical and Physical Treatment:
Neutralize
Do not burn
Clean shore line

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** 21; Phenols, cresols
2.2 **Formula:** CH₃C₆H₄OH
2.3 **IMO/UN Designation:** 6.1/2076
2.4 **DOT ID No.:** 2076
2.5 **CAS Registry No.:** 95-48-7
2.6 **NAERG Guide No.:** 153
2.7 **Standard Industrial Trade Classification:** 51242

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Chemical goggles or face shields, full protective clothing including boots and gloves, and respiratory protective apparatus.
- 3.2 **Symptoms Following Exposure:** INHALATION, INGESTION OR SKIN ABSORPTION: Central nervous system depression, muscular weakness, gastroenteric disturbances, convulsions and death. EYES: can cause burns. SKIN: Corrosive action may produce severe burns.
- 3.3 **Treatment of Exposure:** Call a doctor. INHALATION: Move to fresh air. Oxygen inhalation for respiratory distress. If needed, give artificial respiration. EYES: Irrigate with copious quantities of running water for 15 min. Hold eyelids open. If physician not available irrigate for an additional 15 min. SKIN: Remove all contaminated clothing. Wash with soap and water until all odor is gone. Then wash contaminated areas with alcohol or glycerin. Then use more water. INGESTION: Drink large quantities of liquid (salt water, weak sodium bicarbonate solution, milk or gruel) followed by demulcent such as raw egg white or corn starch paste. Induce vomiting, if not spontaneous. Keep up until vomitus is free of Cresol odor.
- 3.4 **TLV-TWA:** 5 ppm.
3.5 **TLV-STEL:** Not listed.
3.6 **TLV-Ceiling:** Not listed.
3.7 **Toxicity by Ingestion:** Grade 3; LD₅₀ = 50 - 500 mg/kg.
3.8 **Toxicity by Inhalation:** Currently not available.
3.9 **Chronic Toxicity:** May produce neoplasms or act as tumor promoters. Central nervous system damage. Chronic gastritis, possible liver and kidney damage, and lesions of heart and brain. Dermatitis may result.
- 3.10 **Vapor (Gas) Irritant Characteristics:** Vapors cause moderate irritation such that personnel will find high concentrations unpleasant. The effect is temporary.
- 3.11 **Liquid or Solid Characteristics:** Fairly severe skin irritant. May cause pain and second-degree burns after a few minutes contact.
- 3.12 **Odor Threshold:** 0.65 ppm detection in water 0.26 ppm recognition in air.
3.13 **IDLH Value:** 250 ppm
3.14 **OSHA PEL-TWA:** 5 ppm
3.15 **OSHA PEL-STEL:** Not listed.
3.16 **OSHA PEL-Ceiling:** Not listed.
3.17 **EPA AEG1:** Not listed

4. FIRE HAZARDS

- 4.1 **Flash Point:** 178°F C.C.
4.2 **Flammable Limits in Air:** 1.35%
4.3 **Fire Extinguishing Agents:** Water may be used to blanket fire, CO₂, dry chemical, foam, water spray (gently applied).
4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
4.5 **Special Hazards of Combustion Products:** Emits highly toxic fumes.
4.6 **Behavior in Fire:** Vapors form explosive mixtures with air.
4.7 **Auto Ignition Temperature:** 1110°F.
4.8 **Electrical Hazards:** Currently not available
4.9 **Burning Rate:** Currently not available
4.10 **Adiabatic Flame Temperature:** Currently not available
4.11 **Stoichiometric Air to Fuel Ratio:** 40.5 (calc.)
4.12 **Flame Temperature:** Currently not available
4.13 **Combustion Molar Ratio (Reactant to Product):** 11.0 (calc.)
4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** No reaction
5.2 **Reactivity with Common Materials:** No reaction
5.3 **Stability During Transport:** Stable
5.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent
5.5 **Polymerization:** Will not occur.
5.6 **Inhibitor of Polymerization:** Not pertinent

6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:**
49.1-19 ppm/24-96 hr/goldfish/TL_m/soft water
22.2-20.8 ppm/24-96 hr/bluegill/TL_m/soft water
18-13.4 ppm/24-96 hr/fathead minnow/TL_m/hard water
18-50 ppm/24-96 hr/guppy/TL_m/hard water
6.2 **Waterfowl Toxicity:** Chronic water fowl toxic limit is 25 ppm.
6.3 **Biological Oxygen Demand (BOD):** 1.64 lb/lb, 5 days.
6.4 **Food Chain Concentration Potential:** None
6.5 **GESAMP Hazard Profile:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 80-98% containing 2-20% phenol. 99.2% with 0.2% phenol and 0.6% meta and para isomers.
7.2 **Storage Temperature:** Ambient
7.3 **Inert Atmosphere:** No requirement
7.4 **Venting:** Open
7.5 **IMO Pollution Category:** A
7.6 **Ship Type:** 2
7.7 **Barge Hull Type:** Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Poison
8.2 **49 CFR Class:** 6.1
8.3 **49 CFR Package Group:** II
8.4 **Marine Pollutant:** Yes
8.5 **NFPA Hazard Classification:**
- | Category | Classification |
|----------------------|----------------|
| Health Hazard (Blue) | 3 |
| Flammability (Red) | 2 |
| Instability (Yellow) | 0 |
- 8.6 **EPA Reportable Quantity:** 100 pounds
8.7 **EPA Pollution Category:** B
8.8 **RCRA Waste Number:** D023
8.9 **EPA FWPCA List:** Yes

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Solid
9.2 **Molecular Weight:** 108.134.
9.3 **Boiling Point at 1 atm:** 376°F = 191°C = 464.2°K
9.4 **Freezing Point:** 88°F = 31°C = 304.2°K
9.5 **Critical Temperature:** 795.9°F = 424.4°C = 697.6°K
9.6 **Critical Pressure:** 726.0 psia = 49.4 atm = 5.00 MN/m²
9.7 **Specific Gravity:** 1.05 at 20°C.
9.8 **Liquid Surface Tension:** 40.3 dynes/cm = 0.0403 N/m at 20°C.
9.9 **Liquid Water Interfacial Tension:** 32.7 dynes/cm = 0.0327 N/m at 20°C.
9.10 **Vapor (Gas) Specific Gravity:** 3.72.
9.11 **Ratio of Specific Heats of Vapor (Gas):** >1.
9.12 **Latent Heat of Vaporization:** 178.4 Btu/lb = 99.12 cal/g = 4.15 X 10⁵ J/kg.
9.13 **Heat of Combustion:** -13994 Btu/lb = -7774 cal/g = -325 X 10⁵ J/kg.
9.14 **Heat of Decomposition:** Not pertinent
9.15 **Heat of Solution:** Not pertinent
9.16 **Heat of Polymerization:** Not pertinent
9.17 **Heat of Fusion:** Currently not available
9.18 **Limiting Value:** Currently not available
9.19 **Reid Vapor Pressure:** Currently not available

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
70	65.459	20	0.555	90	1.055	104	4.490
75	65.235			95	1.052	105	4.390
80	65.025			100	1.050	106	4.270
85	64.829			105	1.047	107	4.160
90	64.643			110	1.045	108	4.050
95	64.466			115	1.042	109	3.940
100	64.301			120	1.040	110	3.830
105	64.141			125	1.037	111	3.720
110	63.991			130	1.035	112	3.610
115	63.846			135	1.032	113	3.500
120	63.708			140	1.030		

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	M	100	0.020	90	0.00024	80	0.290
	I	120	0.048	95	0.00030	100	0.298
	S	140	0.101	100	0.00037	120	0.306
	C	160	0.192	105	0.00044	140	0.315
	I	180	0.340	110	0.00053	160	0.323
	B	200	0.566	115	0.00063	180	0.331
	L	220	0.899	120	0.00074	200	0.339
	E	240	1.370	125	0.00087	220	0.347
		260	2.018	130	0.00101	240	0.355
		280	2.890			260	0.363
		300	4.036			280	0.371
		320	5.518			300	0.379
		340	7.401			320	0.387
		360	9.761			340	0.395
						360	0.403
						380	0.411
						400	0.420
						420	0.428
						440	0.436