

CARBOLIC OIL (MIXTURE)

CBO

CAUTIONARY RESPONSE INFORMATION

Common Synonyms		Liquid	Colorless - darkens on exposure to light	Sweet tar odor
Carbolic acid Liquefied phenol Middle oil		Sinks and mixes with water.		
<p>Evacuate. Keep people away. AVOID CONTACT WITH LIQUID. Wear chemical protective suit with self-contained breathing apparatus. Call fire department. Notify local health and pollution control agencies. Protect water intakes.</p>				
Fire	Combustible. POISONOUS GASES ARE PRODUCED WHEN HEATED. Wear chemical protective suit with self-contained breathing apparatus. Extinguish with water, dry chemical, foam or carbon dioxide.			
Exposure	CALL FOR MEDICAL AID. LIQUID POISONOUS IF SWALLOWED OR IF SKIN IS EXPOSED. Remove contaminated clothing and shoes. Flush affected area 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. DO NOT INDUCE VOMITING.			
Water Pollution	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.			

1. CORRECTIVE RESPONSE ACTIONS Dilute and disperse Stop discharge Collection Systems: Pump Do not burn	2. CHEMICAL DESIGNATIONS 2.1 CG Compatibility Group: 21; Phenols, cresols 2.2 Formula: C ₆ H ₅ OH 2.3 IMO/UN Designation: 9.0/2821 2.4 DOT ID No.: 2821 2.5 CAS Registry No.: 108-95-2 2.6 NAERG Guide No.: 153 2.7 Standard Industrial Trade Classification: 51241
3. HEALTH HAZARDS 3.1 Personal Protective Equipment: Fresh air mask for confined areas; rubber gloves; protective clothing; full face shield 3.2 Symptoms Following Exposure: Will burn eyes and skin. The analgesic action may cause loss of pain sensation. Readily absorbed through skin, causing increased heart rate, convulsions, and death. 3.3 Treatment of Exposure: INHALATION: remove victim to fresh air, keep quiet and warm. If breathing stops, start artificial respiration. INGESTION: do NOT induce vomiting. Give milk, egg whites, or large amounts of water. Get medical assistance. No known antidote. EYES AND SKIN: remove contaminated clothing. Flush eyes with water for 15 minutes or until physician arrives. Wash skin with soap and water. 3.4 TLV-TWA: 5 ppm 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 Toxicity by Ingestion: Grade 2; LD ₅₀ = 0.5 to 5 g/kg (rat) 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Causes cancer in experimental animals. 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: 0.05 ppm 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 AEGL: Not listed	

4. FIRE HAZARDS

- 4.1 Flash Point: 185°F O.C. 175°F C.C.
- 4.2 Flammable Limits in Air: 1.7%-8.6%
- 4.3 Fire Extinguishing Agents: Water, dry chemical, foam, or carbon dioxide
- 4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent
- 4.5 Special Hazards of Combustion Products: Unburned vapor is toxic
- 4.6 Behavior in Fire: Yields flammable vapors when heated, which will form explosive mixtures with air
- 4.7 Auto Ignition Temperature: 1319°F
- 4.8 Electrical Hazards: Not pertinent
- 4.9 Burning Rate: 3.5 mm/min.
- 4.10 Adiabatic Flame Temperature: Currently not available
- 4.11 Stoichiometric Air to Fuel Ratio: 33.3 (calc.)
- 4.12 Flame Temperature: Currently not available
- 4.13 Combustion Molar Ratio (Reactant to Product): 9.0 (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: Not pertinent
- 5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

- 6.1 Aquatic Toxicity: 11.5-28.5mg/1/96 hr/bluegill/TL_m/fresh water
1.5 ppm/48 hr/rainbow trout/TL_m/fresh water
- 6.2 Waterfowl Toxicity: Currently not available
- 6.3 Biological Oxygen Demand (BOD): 200%, 5 days
- 6.4 Food Chain Concentration Potential: None
- 6.5 GESAMP Hazard Profile: Bioaccumulation: T
Damage to living resources: 3
Human Oral hazard: 2
Human Contact hazard: II
Reduction of amenities: XX

7. SHIPPING INFORMATION

- 7.1 Grades of Purity: 90-92% phenol; 80-82% phenol (Remainder consists of cresols and water)
- 7.2 Storage Temperature: Ambient
- 7.3 Inert Atmosphere: No requirement
- 7.4 Venting: Pressure-vacuum
- 7.5 IMO Pollution Category: A
- 7.6 Ship Type: 2
- 7.7 Barge Hull Type: 1

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: No
- 8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	3
Flammability (Red).....	2
Instability (Yellow).....	0
- 8.6 EPA Reportable Quantity: Not listed.
- 8.7 EPA Pollution Category: Not listed.
- 8.8 RCRA Waste Number: Not listed
- 8.9 EPA FWPCA List: Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 Physical State at 15° C and 1 atm: Liquid
- 9.2 Molecular Weight: 94.11
- 9.3 Boiling Point at 1 atm: 359.2°F = 181.8°C = 455.0°K
- 9.4 Freezing Point: <105.6°F = <40.9°C = <314.1°K
- 9.5 Critical Temperature: 790.0°F = 421.1°C = 694.3°K
- 9.6 Critical Pressure: 889 psia = 60.5 atm = 6.13 MN/m²
- 9.7 Specific Gravity: 1.04 at 41°C (liquid)
- 9.8 Liquid Surface Tension: 41 dynes/cm = 0.041 N/m at 20°C
- 9.9 Liquid Water Interfacial Tension: Not pertinent
- 9.10 Vapor (Gas) Specific Gravity: Not pertinent
- 9.11 Ratio of Specific Heats of Vapor (Gas): 1.089
- 9.12 Latent Heat of Vaporization: 129.6 Btu/lb = 72.0 cal/g = 3.014 X 10⁵ J/kg
- 9.13 Heat of Combustion: -13,401 Btu/lb = -7445 cal/g = -311.707 X 10³ 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: 28.67 cal/g
- 9.18 Limiting Value: Currently not available
- 9.19 Reid Vapor Pressure: 0.03 psia

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
110	65.030		C	122	1.113	110	4.302
115	64.900		U			115	3.929
120	64.759		R			120	3.594
125	64.629		R			125	3.292
130	64.500		E			130	3.021
135	64.370		N			135	2.775
140	64.250		T			140	2.554
145	64.120		L			145	2.353
150	63.990		Y			150	2.171
155	63.860					155	2.005
160	63.740		N			160	1.855
165	63.610		O			165	1.718
170	63.490		T			170	1.593
175	63.360					175	1.479
180	63.240		A				
185	63.120		V				
190	63.000		A				
195	62.870		I				
200	62.750		L				
205	62.630		A				
210	62.510		B				
			L				
			E				

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
68	8.400	70	0.012	70	0.00019	0	0.224
		80	0.017	80	0.00027	25	0.237
		90	0.024	90	0.00039	50	0.250
		100	0.034	100	0.00054	75	0.262
		110	0.048	110	0.00074	100	0.274
		120	0.066	120	0.00100	125	0.286
		130	0.091	130	0.00135	150	0.297
		140	0.123	140	0.00180	175	0.309
		150	0.165	150	0.00238	200	0.319
		160	0.220	160	0.00311	225	0.330
		170	0.289	170	0.00403	250	0.341
		180	0.378	180	0.00518	275	0.351
		190	0.490	190	0.00661	300	0.360
		200	0.629	200	0.00836	325	0.370
		210	0.802	210	0.01050	350	0.379
		220	1.016	220	0.01311	375	0.388
		230	1.278	230	0.01624	400	0.397
		240	1.596	240	0.02000	425	0.405
		250	1.982	250	0.02449	450	0.414
		260	2.446	260	0.02980	475	0.422
		270	3.002	270	0.03607	500	0.429
		280	3.663	280	0.04342	525	0.436
		290	4.446	290	0.05200	550	0.444
		300	5.370	300	0.06197	575	0.450
		310	6.453	310	0.07350	600	0.457
		320	7.718	320	0.08679		