

# CUMENE HYDROPEROXIDE

CMH

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> CHP Cumyl hydroperoxide alpha,alpha-Dimethylbenzene hydroperoxide Dimethylbenzyl hydroperoxide Isopropylbenzene hydroperoxide		Liquid  Colorless to light yellow  Sharp, irritating odor
Sinks in water.		
Keep people away. Avoid contact with liquid and vapor. Shut off ignition sources and call fire department. Notify local health and pollution control agencies. Protect water intakes.		
<b>Fire</b>	Combustible. POISONOUS GASES MAY BE PRODUCED IN FIRE. Containers may explode in fire. Extinguish with dry chemicals, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.	
<b>Exposure</b>	Call for medical aid.  VAPOR Irritating to eyes, nose and throat. If inhaled will cause headache or coughing. Move victim to fresh air. If breathing is difficult, give oxygen.  LIQUID Irritating to skin and eyes. Harmful if swallowed. 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. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.	
<b>Water Pollution</b>	Effect of low concentrations on aquatic life is unknown. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.	

### 1. CORRECTIVE RESPONSE ACTIONS

Stop discharge  
 Contain  
 Collection Systems: Skim; Pump;  
 Dredge  
 Chemical and Physical Treatment:  
 Absorb  
 Clean shore line  
 Do not burn

### 2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.  
 2.2 Formula:  $C_9H_{10}(OOH)(CH_3)_2$   
 $C_9H_9CH(CH_3)_2$  (mixture)  
 2.3 IMO/UN Designation: 5.2/2116  
 2.4 DOT ID No.: Not listed  
 2.5 CAS Registry No.: 80-15-9  
 2.6 NAERG Guide No.: 147  
 2.7 Standard Industrial Trade Classification: 51129

### 3. HEALTH HAZARDS

3.1 **Personal Protective Equipment:** Self-contained or air-line breathing apparatus; solvent-resistant rubber gloves; chemical splash goggles; rubber apron; rubber or PVC clothing; full face shield.  
 3.2 **Symptoms Following Exposure:** Inhalation of vapor causes headache and burning throat. Liquid causes severe irritation of eyes; on skin, causes burning, throbbing sensation, irritation, and blisters. Ingestion causes irritation of mouth and stomach.  
 3.3 **Treatment of Exposure:** Get medical attention after all exposures to this compound. INHALATION: remove victim and administer artificial respiration and oxygen if necessary. EYES: flush with water for 15 min. SKIN: wash several times with soap and water; treat as burn. INGESTION: induce vomiting and follow with gastric lavage.  
 3.4 TLV-TWA: Not listed.  
 3.5 TLV-STEL: Not listed.  
 3.6 TLV-Ceiling: Not listed.  
 3.7 **Toxicity by Ingestion:** Grade 3; oral LD<sub>50</sub> = 382 mg/kg (rat)  
 3.8 **Toxicity by Inhalation:** Currently not available.  
 3.9 **Chronic Toxicity:** Currently not available  
 3.10 **Vapor (Gas) Irritant Characteristics:** Currently not available  
 3.11 **Liquid or Solid Characteristics:** Currently not available  
 3.12 **Odor Threshold:** Currently not available  
 3.13 **IDLH Value:** Not listed.  
 3.14 OSHA PEL-TWA: Not listed.  
 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:** 147°F O.C. 120°F C.C.  
 4.2 **Flammable Limits in Air:** 0.9%-6.5%  
 4.3 **Fire Extinguishing Agents:** Foam, dry chemical, or carbon dioxide  
 4.4 **Fire Extinguishing Agents Not to Be Used:** Water may be ineffective.  
 4.5 **Special Hazards of Combustion Products:** Toxic phenol vapors may form from hot material.  
 4.6 **Behavior in Fire:** May decompose violently when heated. Burning rate becomes more rapid as fire burns.  
 4.7 **Auto Ignition Temperature:** Decomposes violently at temperature above 300°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:** 52.4 (calc.)  
 4.12 **Flame Temperature:** Currently not available  
 4.13 **Combustion Molar Ratio (Reactant to Product):** 15.0 (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:** Decomposition is catalyzed by metals such as aluminum, copper, brass, zinc, and lead. The reaction is not hazardous unless hot.  
 5.3 **Stability During Transport:** Stable if kept below 125°F and out of direct sunlight.  
 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:** Currently not available  
 6.2 **Waterfowl Toxicity:** Currently not available  
 6.3 **Biological Oxygen Demand (BOD):** Currently not available  
 6.4 **Food Chain Concentration Potential:** None  
 6.5 **GESAMP Hazard Profile:** Not listed

### 7. SHIPPING INFORMATION

7.1 **Grades of Purity:** 77-85%, the balance being cumene hydrocarbon.  
 7.2 **Storage Temperature:** Below 125°F  
 7.3 **Inert Atmosphere:** No requirement  
 7.4 **Venting:** Containers must be stored in well-ventilated area.  
 7.5 **IMO Pollution Category:** Currently not available  
 7.6 **Ship Type:** Currently not available  
 7.7 **Barge Hull Type:** Currently not available

### 8. HAZARD CLASSIFICATIONS

8.1 **49 CFR Category:** Not listed  
 8.2 **49 CFR Class:** Not pertinent  
 8.3 **49 CFR Package Group:** Not listed.  
 8.4 **Marine Pollutant:** No  
 8.5 **NFPA Hazard Classification:**

Category	Classification
Health Hazard (Blue).....	1
Flammability (Red).....	2
Instability (Yellow).....	4
Special (White).....	OX

8.6 **EPA Reportable Quantity:** 10 pounds  
 8.7 **EPA Pollution Category:** A  
 8.8 **RCRA Waste Number:** U096  
 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:** Mixture  
 9.3 **Boiling Point at 1 atm:** Decomposes  
 9.4 **Freezing Point:** 16°F = -9°C = 264°K  
 9.5 **Critical Temperature:** Not pertinent  
 9.6 **Critical Pressure:** Not pertinent  
 9.7 **Specific Gravity:** 1.03 at 25°C (liquid)  
 9.8 **Liquid Surface Tension:** (est.) 25 dynes/cm = 0.025 N/m at 20°C  
 9.9 **Liquid Water Interfacial Tension:** (est.) 30 dynes/cm = 0.030 N/m at 20°C  
 9.10 **Vapor (Gas) Specific Gravity:** Not pertinent  
 9.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent  
 9.12 **Latent Heat of Vaporization:** Not pertinent  
 9.13 **Heat of Combustion:** (est.) -13,300 Btu/lb = -7,400 cal/g = -310 X 10<sup>5</sup> J/kg  
 9.14 **Heat of Decomposition:** -855 Btu/lb = -475 cal/g = -19.9 X 10<sup>5</sup> J/kg  
 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
51	65.200	51	0.450	51	1.048	51	30.850
52	65.160	52	0.450	52	1.048	52	29.840
53	65.129	53	0.450	53	1.048	53	28.880
54	65.089	54	0.450	54	1.048	54	27.940
55	65.059	55	0.450	55	1.048	55	27.050
56	65.020	56	0.450	56	1.048	56	26.180
57	64.990	57	0.450	57	1.048	57	25.340
58	64.950	58	0.450	58	1.048	58	24.540
59	64.919	59	0.450	59	1.048	59	23.760
60	64.879	60	0.450	60	1.048	60	23.010
61	64.849	61	0.450	61	1.048	61	22.290
62	64.809	62	0.450	62	1.048	62	21.590
63	64.780	63	0.450	63	1.048	63	20.920
64	64.750	64	0.450	64	1.048	64	20.270
65	64.709	65	0.450	65	1.048	65	19.640
66	64.679	66	0.450	66	1.048	66	19.030
67	64.639	67	0.450	67	1.048	67	18.450
68	64.610	68	0.450	68	1.048	68	17.880
69	64.570	69	0.450	69	1.048	69	17.340
70	64.540	70	0.450	70	1.048	70	16.810
71	64.500	71	0.450	71	1.048	71	16.300
72	64.469	72	0.450	72	1.048	72	15.810
73	64.429	73	0.450	73	1.048	73	15.340
74	64.400	74	0.450	74	1.048	74	14.880
75	64.360	75	0.450	75	1.048	75	14.430
76	64.330	76	0.450	76	1.048	76	14.000

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
	I	60	0.003		N		N
	N	62	0.004		O		O
	S	64	0.004		T		T
	O	66	0.004				P
	L	68	0.005		P		E
	U	70	0.005		E		R
	B	72	0.005		R		T
	L	74	0.006		T		I
	E	76	0.006		I		N
		78	0.007		N		E
		80	0.008		E		N
		82	0.008		N		T
		84	0.009		T		
		86	0.010				
		88	0.010				
		90	0.011				
		92	0.012				
		94	0.013				
		96	0.014				
		98	0.015				
		100	0.017				
		102	0.018				
		104	0.019				