

# METHYL CYCLOPENTANE

MCP

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> Cyclopentane, methyl	Liquid	Colorless	Gasoline-like odor
Floats on water. Flammable, irritating vapor is produced.			
<p>Evacuate. Keep people away. Shut off ignition sources. Call fire department. Notify local health and pollution control agencies.</p>			
<b>Fire</b>	<p>FLAMMABLE. Containers may explode in fire. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Extinguish with dry chemicals, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.</p>		
<b>Exposure</b>	<p>Call for medical aid.</p> <p>VAPOR If inhaled will cause dizziness or difficult breathing. Move victim to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>LIQUID Irritating to skin and eyes. 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.</p>		
<b>Water Pollution</b>	<p>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.</p>		

### 1. CORRECTIVE RESPONSE ACTIONS

Stop discharge  
Contain  
Collection Systems: Skim  
Chemical and Physical Treatment: Burn  
Clean shore line

### 2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.  
2.2 Formula: C<sub>5</sub>H<sub>12</sub>  
2.3 IMO/UN Designation: 3.1/2298  
2.4 DOT ID No.: 2298  
2.5 CAS Registry No.: 96-37-7  
2.6 NAERG Guide No.: 128  
2.7 Standard Industrial Trade Classification: 51129

### 3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Self-contained breathing apparatus; goggles or face shield; rubber gloves.
- 3.2 **Symptoms Following Exposure:** Inhalation causes dizziness, nausea, and vomiting; concentrated vapor may cause unconsciousness and collapse. Liquid causes irritation of eyes and mild irritation of skin if allowed to remain. Ingestion causes irritation of stomach. Aspiration causes severe lung irritation, rapidly developing pulmonary edema, and central nervous system excitement followed by depression.
- 3.3 **Treatment of Exposure:** INHALATION: remove victim from exposure; if breathing has stopped, begin artificial respiration; call physician. EYES: flush with water for 15 min.; call physician. SKIN: flush well with water, then wash with soap and water. INGESTION: do NOT induce vomiting; guard against aspiration into lungs. ASPIRATION: enforce bed rest; give oxygen; get medical attention.
- 3.4 TLV-TWA: Not listed.  
3.5 TLV-STEL: Not listed.  
3.6 TLV-Ceiling: Not listed.  
3.7 **Toxicity by Ingestion:** Grade 1; LD<sub>50</sub> = 5 to 15 g/kg  
3.8 **Toxicity by Inhalation:** Currently not available.  
3.9 **Chronic Toxicity:** Currently not available  
3.10 **Vapor (Gas) Irritant Characteristics:** Vapors are nonirritating to eyes and throat.  
3.11 **Liquid or Solid Characteristics:** Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of skin.  
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:** <0°F C.C.
- 4.2 **Flammable Limits in Air:** 1.1%-8.7% (approx.)
- 4.3 **Fire Extinguishing Agents:** Dry chemical, foam, carbon dioxide.
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Water may be ineffective.
- 4.5 **Special Hazards of Combustion Products:** Not pertinent
- 4.6 **Behavior in Fire:** Vapor is heavier than air and may travel a considerable distance to a source of ignition and flash back.
- 4.7 **Auto Ignition Temperature:** 624°F
- 4.8 **Electrical Hazards:** Currently not available
- 4.9 **Burning Rate:** 7.1 mm/min.
- 4.10 **Adiabatic Flame Temperature:** Currently not available
- 4.11 **Stoichiometric Air to Fuel Ratio:** 42.8 (calc.)
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** 12.0 (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:** 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:**  
Bioaccumulation: -  
Damage to living resources: 3  
Human Oral hazard: -  
Human Contact hazard: -  
Reduction of amenities: -

### 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Research: 99.94%; Pure: 99.5%; Technical: 96.5%
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Pressure-vacuum
- 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:** Flammable liquid
- 8.2 **49 CFR Class:** 3
- 8.3 **49 CFR Package Group:** II
- 8.4 **Marine Pollutant:** No
- 8.5 **NFPA Hazard Classification:**
- | Category                  | Classification |
|---------------------------|----------------|
| Health Hazard (Blue)..... | 2              |
| Flammability (Red).....   | 3              |
| 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:** 84.2
- 9.3 **Boiling Point at 1 atm:** 161.3°F = 71.8°C = 345.0°K
- 9.4 **Freezing Point:** -224°F = -142°C = 131°K
- 9.5 **Critical Temperature:** 499.3°F = 259.6°C = 532.8°K
- 9.6 **Critical Pressure:** 550 psia = 37.4 atm = 3.79 MN/m<sup>2</sup>
- 9.7 **Specific Gravity:** 0.749 at 20°C (liquid)
- 9.8 **Liquid Surface Tension:** 21.60 dynes/cm = 0.0216 N/m at 20°C
- 9.9 **Liquid Water Interfacial Tension:** (est.) 35 dynes/cm = 0.035 N/m at 20°C
- 9.10 **Vapor (Gas) Specific Gravity:** 2.9
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** 1.0834
- 9.12 **Latent Heat of Vaporization:** 162 Btu/lb = 90 cal/g = 3.8 X 10<sup>5</sup> J/kg
- 9.13 **Heat of Combustion:** (liquid) -18,900 Btu/lb = -10,500 cal/g = -440 X 10<sup>5</sup> 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:** 19.68 cal/g
- 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
35	47.900	34	0.525	65	0.841	15	0.741
40	47.730	36	0.526	70	0.835	20	0.712
45	47.550	38	0.527	75	0.829	25	0.684
50	47.380	40	0.528	80	0.823	30	0.659
55	47.210	42	0.528	85	0.817	35	0.635
60	47.030	44	0.529	90	0.811	40	0.612
65	46.860	46	0.530	95	0.805	45	0.590
70	46.680	48	0.531	100	0.799	50	0.569
75	46.510	50	0.532	105	0.793	55	0.550
80	46.340	52	0.533	110	0.788	60	0.532
85	46.160	54	0.534	115	0.782	65	0.514
90	45.990	56	0.535	120	0.776	70	0.498
95	45.820	58	0.536	125	0.770	75	0.482
100	45.640	60	0.536	130	0.764	80	0.467
		62	0.537			85	0.453
		64	0.538			90	0.439
		66	0.539			95	0.426
		68	0.540			100	0.414
		70	0.541			105	0.402
		72	0.542			110	0.391
		74	0.543			115	0.380
		76	0.544			120	0.370
		78	0.544				
		80	0.545				
		82	0.546				
		84	0.547				

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	55	1.493	55	0.02275	50	0.295
	N	60	1.697	60	0.02562	60	0.301
	S	65	1.925	65	0.02877	70	0.308
	O	70	2.177	70	0.03224	80	0.314
	L	75	2.458	75	0.03605	90	0.320
	U	80	2.768	80	0.04023	100	0.327
	B	85	3.110	85	0.04479	110	0.333
	L	90	3.488	90	0.04977	120	0.339
	E	95	3.903	95	0.05519	130	0.346
		100	4.359	100	0.06109	140	0.352
		105	4.858	105	0.06748	150	0.359
		110	5.405	110	0.07442	160	0.365
		115	6.001	115	0.08191	170	0.371
		120	6.652	120	0.09001	180	0.378
		125	7.360	125	0.09874	190	0.384
		130	8.130	130	0.10810	200	0.390
		135	8.965	135	0.11820	210	0.397
		140	9.870	140	0.12910	220	0.403
		145	10.850	145	0.14070	230	0.409
		150	11.910	150	0.15320	240	0.416
		155	13.050	155	0.16650	250	0.422
		160	14.280	160	0.18070	260	0.429
		165	15.600	165	0.19590		