

# METHYL CHLORIDE

MTC

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b>			
Artic Chloromethane	Gas	Colorless	Odorless or sweet odor
Floats and boils on water. Flammable, visible vapor cloud is formed.			
<p>Evacuate.                  Keep people away. Avoid contact with liquid and vapor.                  Wear goggles and self-contained breathing apparatus.                  Shut off ignition sources and call fire department.                  Stay upwind and use water spray to "knock down" vapor.                  Notify local health and pollution control agencies.</p>			
<b>Fire</b>	<p>FLAMMABLE.                  POISONOUS GASES ARE PRODUCED IN FIRE.                  Flashback along vapor trail may occur.                  Vapor may explode if ignited in an enclosed area.                  Wear goggles and self-contained breathing apparatus.                  Stop discharge if possible.                  Cool exposed containers and protect men effecting shutoff with water.                  Let fire burn.</p>		
<b>Exposure</b>	<p>CALL FOR MEDICAL AID.</p> <p>VAPOR                  Not irritating to eyes, nose or throat.                  If inhaled, will cause nausea, vomiting, headache, difficult breathing,                  or loss of consciousness.                  Move to fresh air.                  If breathing has stopped, give artificial respiration.                  If breathing is difficult, give oxygen.</p> <p>LIQUID                  Will cause frostbite.                  Flush affected areas with plenty of water.                  DO NOT RUB AFFECTED AREAS.</p>		
<b>Water Pollution</b>	Not harmful to aquatic life.		

### 1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse  
Stop discharge

### 2. CHEMICAL DESIGNATIONS

- 2.1 **CG Compatibility Group:** 36; Halogenated hydrocarbon  
 2.2 **Formula:** CHCl  
 2.3 **IMO/UN Designation:** 2.0/1063  
 2.4 **DOT ID No.:** 1063  
 2.5 **CAS Registry No.:** 74-87-3  
 2.6 **NAERG Guide No.:** 115  
 2.7 **Standard Industrial Trade Classification:** 51134

### 3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Approved canister mask; leather or vinyl gloves; goggles or face shield.  
 3.2 **Symptoms Following Exposure:** Inhalation causes nausea, vomiting, weakness, headache, emotional disturbances; high concentrations cause mental confusion, eye disturbances, muscular tremors, cyanosis, convulsions. Contact of liquid with skin may cause frostbite.  
 3.3 **Treatment of Exposure:** Remove to fresh air. Call a doctor and have patient hospitalized for observation of slowly developing symptoms.  
 3.4 **TLV-TWA:** 50 ppm  
 3.5 **TLV-STEL:** Not listed.  
 3.6 **TLV-Ceiling:** 100 ppm  
 3.7 **Toxicity by Ingestion:** Not pertinent  
 3.8 **Toxicity by Inhalation:** Currently not available.  
 3.9 **Chronic Toxicity:** None  
 3.10 **Vapor (Gas) Irritant Characteristics:** Vapors are nonirritating to the eyes and throat.  
 3.11 **Liquid or Solid Characteristics:** No appreciable hazard. Practically harmless to the skin because it evaporates quickly. May cause frostbite.  
 3.12 **Odor Threshold:** Currently not available  
 3.13 **IDLH Value:** 2,000 ppm  
 3.14 **OSHA PEL-TWA:** 100 ppm  
 3.15 **OSHA PEL-STEL:** 300 ppm, 5 minute peak in any 3 hours.  
 3.16 **OSHA PEL-Ceiling:** 200 ppm.  
 3.17 **EPA AEGL:** Not listed

### 4. FIRE HAZARDS

- 4.1 **Flash Point:** <32°F C.C.  
 4.2 **Flammable Limits in Air:** 8.1%-17.2%  
 4.3 **Fire Extinguishing Agents:** Dry chemical or carbon dioxide. Stop flow of gas.  
 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent  
 4.5 **Special Hazards of Combustion Products:** Toxic and irritating gases are generated in fires.  
 4.6 **Behavior in Fire:** Containers may explode  
 4.7 **Auto Ignition Temperature:** 1170°F  
 4.8 **Electrical Hazards:** Not pertinent  
 4.9 **Burning Rate:** 2.2 mm/min.  
 4.10 **Adiabatic Flame Temperature:** Currently not available  
 4.11 **Stoichiometric Air to Fuel Ratio:** 7.1 (calc.)  
 4.12 **Flame Temperature:** Currently not available  
 4.13 **Combustion Molar Ratio (Reactant to Product):** 3.0 (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:** Reacts with zinc, aluminum, magnesium, and their alloys; reaction is not violent.  
 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:** None  
 6.2 **Waterfowl Toxicity:** None  
 6.3 **Biological Oxygen Demand (BOD):** None  
 6.4 **Food Chain Concentration Potential:** None  
 6.5 **GESAMP Hazard Profile:**  
 Bioaccumulation: 0  
 Damage to living resources: 3  
 Human Oral hazard: -  
 Human Contact hazard: II  
 Reduction of amenities: X

### 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Technical grade; "Artic" refrigerant grade  
 7.2 **Storage Temperature:** Ambient  
 7.3 **Inert Atmosphere:** No requirement  
 7.4 **Venting:** Safety relief  
 7.5 **IMO Pollution Category:** Currently not available  
 7.6 **Ship Type:** 2  
 7.7 **Barge Hull Type:** 2

### 8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Flammable gas  
 8.2 **49 CFR Class:** 2.1  
 8.3 **49 CFR Package Group:** Not pertinent.  
 8.4 **Marine Pollutant:** No  
 8.5 **NFPA Hazard Classification:**  

Category	Classification
Health Hazard (Blue).....	2
Flammability (Red).....	4
Instability (Yellow).....	0

 8.6 **EPA Reportable Quantity:** 100 pounds  
 8.7 **EPA Pollution Category:** B  
 8.8 **RCRA Waste Number:** U045  
 8.9 **EPA FWPCA List:** Not listed

### 9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Gas  
 9.2 **Molecular Weight:** 50.49  
 9.3 **Boiling Point at 1 atm:** -11.6°F = -24.2°C = 249°K  
 9.4 **Freezing Point:** -143.9°F = 97.7°C = 175.5°K  
 9.5 **Critical Temperature:** 290.5°F = 143.6°C = 416.8°K  
 9.6 **Critical Pressure:** 969 psia = 65.9 atm = 6.68 MN/m<sup>2</sup>  
 9.7 **Specific Gravity:** 0.997 at -24°C (liquid)  
 9.8 **Liquid Surface Tension:** 16.2 dynes/cm = 0.0162 N/m at 20°C  
 9.9 **Liquid Water Interfacial Tension:** (est.) 50 dynes/cm = 0.05 N/m at -24°C  
 9.10 **Vapor (Gas) Specific Gravity:** 1.7  
 9.11 **Ratio of Specific Heats of Vapor (Gas):** 1.259  
 9.12 **Latent Heat of Vaporization:** 182.3 Btu/lb = 101.3 cal/g = 4.241 X 10<sup>5</sup> J/kg  
 9.13 **Heat of Combustion:** -5290 Btu/lb = -2939 cal/g = -123.1 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:** Currently not available  
 9.18 **Limiting Value:** Currently not available  
 9.19 **Reid Vapor Pressure:** 116.7 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
-20	62.170	-50	0.354		C U R R E N T L Y  N O T  A V A I L A B L E	-30	0.332
-15	61.860	-40	0.357			-20	0.320
		-30	0.359				
		-20	0.362				

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	0.600	-55	4.590	-55	0.05335	0	0.177
		-50	5.298	-50	0.06083	25	0.182
		-45	6.095	-45	0.06913	50	0.187
		-40	6.987	-40	0.07831	75	0.192
		-35	7.985	-35	0.08843	100	0.197
		-30	9.096	-30	0.09957	125	0.202
		-25	10.330	-25	0.11180	150	0.207
		-20	11.700	-20	0.12520	175	0.212
		-15	13.210	-15	0.13980	200	0.217
		-10	14.880	-10	0.15570	225	0.221
		-5	16.720	-5	0.17300	250	0.226
		0	18.730	0	0.19170	275	0.231
		5	20.940	5	0.21200	300	0.236
		10	23.350	10	0.23390	325	0.240
		15	25.980	15	0.25740	350	0.245
		20	28.840	20	0.28280	375	0.249
		25	31.950	25	0.31000	400	0.254
		30	35.320	30	0.33920	425	0.258
		35	38.960	35	0.37040	450	0.263
		40	42.890	40	0.40380	475	0.267
		45	47.140	45	0.43930	500	0.272
		50	51.700	50	0.47720	525	0.276
		55	56.610	55	0.51740	550	0.281
		60	61.880	60	0.56000	575	0.285
		65	67.520	65	0.60530	600	0.289