

DICHLOROMETHANE

DCM

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Methylene chloride Methylene dichloride		Watery liquid	Colorless	Sweet, pleasant odor
Sinks in water. Irritating vapor is produced.				
<p>Keep people away. Avoid contact with liquid and vapor. Notify local health and pollution control agencies. Protect water intakes.</p>				
Fire	Not flammable. POISONOUS GASES ARE PRODUCED WHEN HEATED. Wear goggles and self-contained breathing apparatus. Cool exposed containers with water.			
Exposure	CALL FOR MEDICAL AID. VAPOR Irritating to eyes, nose and throat. If inhaled, will cause nausea and dizziness. Move to fresh air. If breathing has stopped, give artificial respiration. 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.			
Water Pollution	Effect of low concentrations on aquatic life is unknown. May be dangerous if it enters water intakes. Notify local health and pollution control officials. Notify operators of nearby water intakes.			

1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse
 Stop discharge
 Contain
 Collection Systems: Pump; Dredge
 Do not burn

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** 36; Halogenated hydrocarbon
 2.2 **Formula:** CH₂Cl₂
 2.3 **IMO/UN Designation:** 9.0/1593
 2.4 **DOT ID No.:** 1593
 2.5 **CAS Registry No.:** 75-09-2
 2.6 **NAERG Guide No.:** 160
 2.7 **Standard Industrial Trade Classification:** 51138

3. HEALTH HAZARDS

3.1 **Personal Protective Equipment:** Organic vapor canister mask, safety glasses, protective clothing.
 3.2 **Symptoms Following Exposure:** INHALATION: anesthetic effects, nausea and drunkenness. CONTACT WITH SKIN AND EYES: skin irritation, irritation of eyes and nose.
 3.3 **Treatment of Exposure:** INHALATION: remove from exposure. Give oxygen if needed. INGESTION: no specific antidote. CONTACT WITH SKIN AND EYES: remove contaminated clothing; wash skin or eyes if affected.
 3.4 **TLV-TWA:** 50 ppm
 3.5 **TLV-STEL:** Not listed.
 3.6 **TLV-Ceiling:** Not listed.
 3.7 **Toxicity by Ingestion:** Grade 2; LD₅₀ = 0.5 to 5 g/kg
 3.8 **Toxicity by Inhalation:** Currently not available.
 3.9 **Chronic Toxicity:** None
 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:** Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
 3.12 **Odor Threshold:** 205-307 ppm
 3.13 **IDLH Value:** 2,300 ppm
 3.14 **OSHA PEL-TWA:** 25 ppm
 3.15 **OSHA PEL-STEL:** Not listed.
 3.16 **OSHA PEL-Ceiling:** 125 ppm
 3.17 **EPA AEGL:** Not listed

4. FIRE HAZARDS

4.1 **Flash Point:**
 Not flammable under conditions likely to be encountered.
 4.2 **Flammable Limits in Air:** 12%-19%
 4.3 **Fire Extinguishing Agents:** Not pertinent
 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
 4.5 **Special Hazards of Combustion Products:** Dissociation products generated in a fire may be irritating or toxic.
 4.6 **Behavior in Fire:** Not pertinent
 4.7 **Auto Ignition Temperature:** 1184°F
 4.8 **Electrical Hazards:** Not pertinent
 4.9 **Burning Rate:** Not pertinent
 4.10 **Adiabatic Flame Temperature:** Currently not available
 4.11 **Stoichiometric Air to Fuel Ratio:** Not pertinent
 4.12 **Flame Temperature:** Currently not available
 4.13 **Combustion Molar Ratio (Reactant to Product):** Not pertinent
 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:**
 Not pertinent
 6.2 **Waterfowl Toxicity:** Not pertinent
 6.3 **Biological Oxygen Demand (BOD):** Not pertinent
 6.4 **Food Chain Concentration Potential:**
 None
 6.5 **GESAMP Hazard Profile:**
 Bioaccumulation: 0
 Damage to living resources: 1
 Human Oral hazard: 1
 Human Contact hazard: II
 Reduction of amenities: XX

7. SHIPPING INFORMATION

7.1 **Grades of Purity:** Aerosol grade; technical grade
 7.2 **Storage Temperature:** Currently not available
 7.3 **Inert Atmosphere:** Inerted
 7.4 **Venting:** Currently not available
 7.5 **IMO Pollution Category:** D
 7.6 **Ship Type:** 3
 7.7 **Barge Hull Type:** 3

8. HAZARD CLASSIFICATIONS

8.1 **49 CFR Category:** Keep Away From Food
 8.2 **49 CFR Class:** 6.1
 8.3 **49 CFR Package Group:** III
 8.4 **Marine Pollutant:** No
 8.5 **NFPA Hazard Classification:**

Category	Classification
Health Hazard (Blue).....	2
Flammability (Red).....	0
Instability (Yellow).....	1

 8.6 **EPA Reportable Quantity:** 1000 pounds
 8.7 **EPA Pollution Category:** C
 8.8 **RCRA Waste Number:** U080
 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:** 84.93
 9.3 **Boiling Point at 1 atm:** 104°F = 39.8°C = 313.0°K
 9.4 **Freezing Point:** -142°F = -96.7°C = 176.5°K
 9.5 **Critical Temperature:** 473.0°F = 245°C = 518.2°K
 9.6 **Critical Pressure:** 895 psia = 60.9 atm = 6.17 MN/m²
 9.7 **Specific Gravity:** 1.322 at 20°C (liquid)
 9.8 **Liquid Surface Tension:** Not pertinent
 9.9 **Liquid Water Interfacial Tension:** Not pertinent
 9.10 **Vapor (Gas) Specific Gravity:** 2.9
 9.11 **Ratio of Specific Heats of Vapor (Gas):** 1.199
 9.12 **Latent Heat of Vaporization:** 142 Btu/lb = 78.7 cal/g = 3.30 X 10⁵ J/kg
 9.13 **Heat of Combustion:** Not pertinent
 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:** 16.89 cal/g
 9.18 **Limiting Value:** Currently not available
 9.19 **Reid Vapor Pressure:** 13.9 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
-70	91.320	35	0.274	-110	1.205		N O T P E R T I N E N T
-60	90.700	40	0.275	-100	1.192		
-50	90.080	45	0.276	-90	1.179		
-40	89.450	50	0.277	-80	1.166		
-30	88.830	55	0.278	-70	1.154		
-20	88.200	60	0.279	-60	1.141		
-10	87.580	65	0.279	-50	1.128		
0	86.959	70	0.280	-40	1.115		
10	86.330	75	0.281	-30	1.102		
20	85.709	80	0.282	-20	1.090		
30	85.080	85	0.283	-10	1.077		
40	84.459	90	0.284	0	1.064		
50	83.830	95	0.284	10	1.051		
60	83.209	100	0.285	20	1.038		
70	82.589			30	1.025		
80	81.959			40	1.013		
90	81.341			50	1.000		
100	80.709			60	0.987		
				70	0.974		
				80	0.961		

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	1.380	-10	0.866	-10	0.01525	0	0.126
		-5	1.013	-5	0.01763	10	0.129
		0	1.180	0	0.02031	20	0.131
		5	1.370	5	0.02333	30	0.133
		10	1.586	10	0.02671	40	0.135
		15	1.830	15	0.03050	50	0.137
		20	2.105	20	0.03472	60	0.139
		25	2.414	25	0.03941	70	0.142
		30	2.762	30	0.04462	80	0.144
		35	3.151	35	0.05039	90	0.145
		40	3.585	40	0.05676	100	0.147
		45	4.068	45	0.06378	110	0.149
		50	4.606	50	0.07149	120	0.151
		55	5.201	55	0.07996	130	0.153
		60	5.860	60	0.08922	140	0.155
		65	6.588	65	0.09934	150	0.156
		70	7.389	70	0.11040	160	0.158
		75	8.270	75	0.12240	170	0.159
		80	9.237	80	0.13540	180	0.161
		85	10.300	85	0.14960	190	0.163
						200	0.164
						210	0.165
						220	0.167
						230	0.168
						240	0.169
						250	0.171