

1,3-DICHLOROPROPANE

DPC

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Trimethylene chloride Trimethylene dichloride		Watery liquid	Colorless	Sweet odor
Sinks in water. Flammable, irritating vapor is produced.				
<p>Keep people away. Avoid inhalation. Shut off ignition sources and call fire department. Stay upwind and use water spray to "knock down" vapor. Avoid contact with liquid and vapor. Notify local health and pollution control agencies. Protect water intakes.</p>				
Fire	<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. Extinguish with foam, dry chemical, or carbon dioxide. Cool exposed containers with water.</p>			
Exposure	<p>CALL FOR MEDICAL AID.</p> <p>VAPOR Irritating to eyes, nose and throat. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>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.</p>			
Water Pollution	<p>Effect of low concentrations on aquatic life is unknown. 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: Pump; Dredge
Do not burn

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** Not listed.
2.2 **Formula:** CH₂ClCH₂CH₂Cl
2.3 **IMO/UN Designation:** 3.2/1279
2.4 **DOT ID No.:** 1279
2.5 **CAS Registry No.:** 142-28-9
2.6 **NAERG Guide No.:** 130
2.7 **Standard Industrial Trade Classification:** 51138

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Rubber gloves, self-contained breathing apparatus, coveralls or laboratory coat.
- 3.2 **Symptoms Following Exposure:** INHALATION: May cause some central nervous system depression. EYES: May cause some pain and irritation. SKIN: Mild irritation.
- 3.3 **Treatment of Exposure:** Call a doctor. INHALATION: Remove to fresh air. If breathing has stopped, give artificial respiration. EYES: Flush with running water for 15 minutes. SKIN: Wash thoroughly with soap and water. INGESTION: Gastric lavage or emesis and catharsis.
- 3.4 **TLV-TWA:** Not listed.
3.5 **TLV-STEL:** Not listed.
3.6 **TLV-Ceiling:** Not listed.
3.7 **Toxicity by Ingestion:** Currently not available
3.8 **Toxicity by Inhalation:** Currently not available.
3.9 **Chronic Toxicity:** Alters pancreatic function.
3.10 **Vapor (Gas) Irritant Characteristics:** Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. 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 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:** (est.) 60°F O.C.; 70°F C.C.
4.2 **Flammable Limits in Air:** (est.) 3.4%-14.5%
4.3 **Fire Extinguishing Agents:** Foam, carbon dioxide, dry chemical.
4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
4.5 **Special Hazards of Combustion Products:** Emits fumes of phosgene.
4.6 **Behavior in Fire:** Reacts vigorously.
4.7 **Auto Ignition Temperature:** Currently not available
4.8 **Electrical Hazards:** Not pertinent
4.9 **Burning Rate:** Currently not available
4.10 **Adiabatic Flame Temperature:** Currently not available
4.11 **Stoichiometric Air to Fuel Ratio:** 19.0 (calc.)
4.12 **Flame Temperature:** Currently not available
4.13 **Combustion Molar Ratio (Reactant to Product):** 7.0 (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:** (est.) Threshold range 1 to 100 ppm.
6.2 **Waterfowl Toxicity:** Currently not available
6.3 **Biological Oxygen Demand (BOD):** Currently not available
6.4 **Food Chain Concentration Potential:** Currently not available
6.5 **GESAMP Hazard Profile:**
Bioaccumulation: 0
Damage to living resources: 1
Human Oral hazard: 1
Human Contact hazard: 1
Reduction of amenities: X

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Currently not available
7.2 **Storage Temperature:** Ambient
7.3 **Inert Atmosphere:** No requirement
7.4 **Venting:** Pressure-vacuum
7.5 **IMO Pollution Category:** D
7.6 **Ship Type:** 2
7.7 **Barge Hull Type:** 3

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:** Yes
8.5 **NFPA Hazard Classification:** Not listed
8.6 **EPA Reportable Quantity:** 100 pounds
8.7 **EPA Pollution Category:** B
8.8 **RCRA Waste Number:** U084
8.9 **EPA FWPCA List:** Yes

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Liquid
9.2 **Molecular Weight:** 112.99
9.3 **Boiling Point at 1 atm:** 248.7°F = 120.4°C = 393.6°K
9.4 **Freezing Point:** -147.1°F = -99.5°C = 173.7°K
9.5 **Critical Temperature:** (est.) 597.8°F = 314.3°C = 587.5°K
9.6 **Critical Pressure:** (est.) 613.7 psia = 41.75 atm = 4.23 MN/m²
9.7 **Specific Gravity:** 1.1878 at 20°C
9.8 **Liquid Surface Tension:** 33.93 dynes/cm = 0.03393 N/m at 20°C
9.9 **Liquid Water Interfacial Tension:** 41.1 dynes/cm = 0.0411 N/m at 20°C
9.10 **Vapor (Gas) Specific Gravity:** 3.90
9.11 **Ratio of Specific Heats of Vapor (Gas):** (est.) 1.094 at 20°C (68°F)
9.12 **Latent Heat of Vaporization:** At boiling point, 129 Btu/lb = 71.71 cal/g = 3.0 X 10⁵ J/kg
9.13 **Heat of Combustion:** -6676 Btu/lb = -3709 cal/g = -155 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:** 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
59	74.969						
60	74.853						
61	74.740						
62	74.629						
63	74.523						
64	74.421						
65	74.320						
66	74.224						
67	74.131						
68	74.040						
			C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A 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
	I N S O L U B L E	0	-1.071	40	0.02206	1000	0.381
		10	-1.664	50	0.01194	1025	0.385
		20	-0.257	60	0.00182	1050	0.390
		30	-0.850	70	0.00830	1075	0.394
		40	0.557	80	0.01842	1100	0.398
		50	0.036	90	0.02854	1125	0.403
		60	0.529	100	0.03866	1150	0.407
		70	1.222	110	0.04878	1175	0.412
		80	1.815	120	0.05890	1200	0.416
		90	2.408	130	0.06902	1225	0.421
		100	3.000	140	0.07915	1250	0.425
		110	3.593	150	0.08927	1275	0.429
		120	4.186	160	0.09939	1300	0.434
		130	4.779	170	0.10951	1325	0.438
		140	5.372	180	0.11963	1350	0.443
		150	5.965	190	0.12975	1375	0.447
		160	6.558	200	0.13987	1400	0.452
		170	7.151	210	0.14999	1425	0.456
		180	7.744	220	0.16011	1450	0.460
		190	8.337	230	0.17023	1475	0.465
		200	8.930	240	0.18035	1500	0.469
		210	9.522			1525	0.474
		220	10.115			1550	0.478
		230	10.708			1575	0.483
		240	11.301			1600	0.487
						1625	0.492