

1,2-DICHLOROPROPANE

DPP

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Dichloropropane Propylene 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
Collection Systems: Pump; Dredge
Do not burn

2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: 33; Halogenated hydrocarbon
2.2 Formula: CH₂CHClCH₂Cl
2.3 IMO/UN Designation: 3.2/1279
2.4 DOT ID No.: 1279
2.5 CAS Registry No.: 78-87-5
2.6 NAERG Guide No.: 130
2.7 Standard Industrial Trade Classification: 51138

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Air supply in confined area, rubber gloves, chemical goggles, protective coveralls and rubber footwear.
- 3.2 **Symptoms Following Exposure:** Contact with skin or eyes may cause irritation.
- 3.3 **Treatment of Exposure:** INHALATION: remove to fresh air. CONTACT WITH SKIN OR EYES: wash skin thoroughly with soap and water. Flush eyes with water for 15 min. Call a doctor.
- 3.4 **TLV-TWA:** 75 ppm
3.5 **TLV-STEL:** Not listed.
3.6 **TLV-Ceiling:** 110 ppm
- 3.7 **Toxicity by Ingestion:** Grade 2; LD₅₀ = 0.5 to 5 g/kg (guinea pig)
- 3.8 **Toxicity by Inhalation:** Currently not available.
- 3.9 **Chronic Toxicity:** Currently not available
- 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 the skin.
- 3.12 **Odor Threshold:** Currently not available
- 3.13 **IDLH Value:** 400 ppm
3.14 **OSHA PEL-TWA:** 75 ppm
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:** 70°F O.C. 60°F C.C.
4.2 **Flammable Limits in Air:** 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:** Toxic and irritating gases may be generated.
4.6 **Behavior in Fire:** Not pertinent
4.7 **Auto Ignition Temperature:** 1035°F
4.8 **Electrical Hazards:** Not pertinent
4.9 **Burning Rate:** (est.) 3.2 mm/min.
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:** >100 ppm/crustacea/TL_m/salt water
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: 0
Damage to living resources: 2
Human Oral hazard: 1
Human Contact hazard: II
Reduction of amenities: XX

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Refined
7.2 **Storage Temperature:** Ambient
7.3 **Inert Atmosphere:** No requirement
7.4 **Venting:** Pressure-vacuum
7.5 **IMO Pollution Category:** C
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:**
- | | |
|---------------------------|----------------|
| Category | Classification |
| Health Hazard (Blue)..... | 2 |
| Flammability (Red)..... | 3 |
| Instability (Yellow)..... | 0 |
- 8.6 **EPA Reportable Quantity:** 1000 pounds
8.7 **EPA Pollution Category:** C
8.8 **RCRA Waste Number:** U083
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:** 102.9
9.3 **Boiling Point at 1 atm:** 206°F = 96.4°C = 369.6°K
9.4 **Freezing Point:** -148°F = -100°C = 173°K
9.5 **Critical Temperature:** Not pertinent
9.6 **Critical Pressure:** Not pertinent
9.7 **Specific Gravity:** 1.158 at 20°C (liquid)
9.8 **Liquid Surface Tension:** 29 dynes/cm = 0.029 N/m at 20°C
9.9 **Liquid Water Interfacial Tension:** 37.9 dynes/cm = 0.0379 N/m at 22.7°C
9.10 **Vapor (Gas) Specific Gravity:** 3.5
9.11 **Ratio of Specific Heats of Vapor (Gas):** 1.094
9.12 **Latent Heat of Vaporization:** 122 Btu/lb = 67.7 cal/g = 2.83 X 10⁵ J/kg
9.13 **Heat of Combustion:** (est.) 7300 Btu/lb = 4100 cal/g = 170 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:** 13.53 cal/g
9.18 **Limiting Value:** Currently not available
9.19 **Reid Vapor Pressure:** 1.9 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	71.809	0	0.338	65	0.874	55	0.959
75	71.570	10	0.339	70	0.873	60	0.923
80	71.330	20	0.341	75	0.872	65	0.888
85	71.089	30	0.343	80	0.871	70	0.856
90	70.839	40	0.344	85	0.870	75	0.825
95	70.599	50	0.346	90	0.869	80	0.796
100	70.360	60	0.348	95	0.867	85	0.769
105	70.110	70	0.349	100	0.866	90	0.743
110	69.870	80	0.351	105	0.865	95	0.718
115	69.629	90	0.353	110	0.864	100	0.695
120	69.389	100	0.354	115	0.863	105	0.672
125	69.139	110	0.356	120	0.862	110	0.651
130	68.900	120	0.358	125	0.861	115	0.631
135	68.660	130	0.359			120	0.612
140	68.419	140	0.361			125	0.593
145	68.169	150	0.363			130	0.576
150	67.931	160	0.364			135	0.559
155	67.690	170	0.366			140	0.543
160	67.440	180	0.368				
165	67.200	190	0.369				
170	66.959	200	0.371				
175	66.719						
180	66.469						
185	66.230						
190	65.990						
195	65.750						

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	0.260	40	0.356	40	0.00682	0	0.205
		50	0.478	50	0.00899	25	0.213
		60	0.636	60	0.01172	50	0.220
		70	0.836	70	0.01513	75	0.227
		80	1.088	80	0.01933	100	0.235
		90	1.403	90	0.02447	125	0.242
		100	1.793	100	0.03071	150	0.248
		110	2.272	110	0.03823	175	0.255
		120	2.855	120	0.04721	200	0.262
		130	3.559	130	0.05786	225	0.268
		140	4.405	140	0.07042	250	0.275
		150	5.415	150	0.08513	275	0.281
		160	6.611	160	0.10230	300	0.287
		170	8.021	170	0.12210	325	0.293
		180	9.672	180	0.14490	350	0.299
		190	11.600	190	0.17110	375	0.305
		200	13.830	200	0.20090	400	0.310
		210	16.400	210	0.23480	425	0.316
						450	0.321
						475	0.327
						500	0.332
						525	0.337
						550	0.342
						575	0.346
						600	0.351