# 1,3-DICHLOROPROPENE

**DPU**

## CAUTIONARY RESPONSE INFORMATION

**Common Synonyms**
Dichloropropene
Telone

Liquid Colorless Sweet odor

Sinks in water. Flammable, irritating vapor is produced.

Keep people away. Avoid contact with liquid and vapor.
Avoid inhalation.
Wear rubber overclothing (including gloves).
Shut off ignition sources and call fire department.
Notify local health and pollution control agencies.
Protect water intakes.

**Fire**

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 water, dry chemical, foam, or carbon dioxide.
Cool exposed containers with water.

**Exposure**

CALL FOR MEDICAL AID.

VAPOR
Irritating to eyes, nose and throat.
Move to fresh air.
If breathing has stopped, give artificial respiration.
If breathing is difficult, give oxygen.

LIQUID
Will burn 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 and have victim induce vomiting.
IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing, except keep victim warm.

**Water Pollution**

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.

### 1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Collection Systems: Pump; Dredge
Do not burn

### 2. CHEMICAL DESIGNATIONS

**2.1 CG Compatibility Group:** 15; Substituted allyl
**2.2 Formula:** $ClCH_2CH = CHCl$
**2.3 IMO/UN Designation:** 3.3/2047
**2.4 DOT ID No.:** 2047
**2.5 CAS Registry No.:** 542-75-6
**2.6 NAERG Guide No.:** 132
**2.7 Standard Industrial Trade Classification:** 51138

### 3. HEALTH HAZARDS

**3.1 Personal Protective Equipment:** An approved full face mask equipped with a fresh black canister meeting specifications of the U.S. Bureau of Mines for organic vapors, a full face self-contained breathing apparatus, or full face air-supplied respirator.
**3.2 Symptoms Following Exposure:** Smarting of skin and eyes. Prolonged contact of liquid with skin may cause second-degree burns.
**3.3 Treatment of Exposure:** INHALATION: remove patient to fresh air, keep warm and quiet; call physician immediately; give artificial respiration if breathing has stopped. INGESTION: call physician immediately. Induce vomiting by giving an emetic, e.g., 2 tablespoons table salt in glass of warm water. CONTACT WITH SKIN OR EYES: immediately remove contaminated clothing and shoes. Wash skin with soap and plenty of water. For eyes, flush immediately with plenty of water for at least 15 min. Call physician.
**3.4 TLV-TWA:** 1 ppm
**3.5 TLV-STEL:** Not listed.
**3.6 TLV-Ceiling:** Not listed.
**3.7 Toxicity by Ingestion:** Grade 3; $LD_{50}$ = 50 to 500 mg/kg
**3.8 Toxicity by Inhalation:** Currently not available.
**3.9 Chronic Toxicity:** Currently not available
**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:** Causes smarting of the skin and first-degree burns on short exposure and may cause secondary burns on long exposure.
**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:** 95°F C.C.
**4.2 Flammable Limits in Air:** Currently not available
**4.3 Fire Extinguishing Agents:** Water, dry chemical, foam, carbon dioxide
**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:** Currently not available
**4.8 Electrical Hazards:** Currently not available
**4.9 Burning Rate:** (est.) 3.4 mm/min.
**4.10 Adiabatic Flame Temperature:** Currently not available
**4.11 Stoichometric Air to Fuel Ratio:** 16.7 (calc.)
**4.12 Flame Temperature:** Currently not available
**4.13 Combustion Molar Ratio (Reactant to Product):** 6.0 (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/*/daphnia/toxic/fresh water
*Time period not specified.
**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:** 3
**Human Oral hazard:** 2
**Human Contact hazard:** II
**Reduction of amenities:** X

### 7. SHIPPING INFORMATION

**7.1 Grades of Purity:** Telone soil fumigant: 100%; Telone C soil fungicide: 85%, chloropicrin 15%
**7.2 Storage Temperature:** Ambient
**7.3 Inert Atmosphere:** No requirement
**7.4 Venting:** Pressure-vacuum
**7.5 IMO Pollution Category:** B
**7.6 Ship Type:** 2
**7.7 Barge Hull Type:** 2

### 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:** 100 pounds
**8.7 EPA Pollution Category:** B
**8.8 RCRA Waste Number:** U084
**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:** 110.98
**9.3 Boiling Point at 1 atm:** 170°F = 77°C = 350°K
**9.4 Freezing Point:** Not pertinent
**9.5 Critical Temperature:** Not pertinent
**9.6 Critical Pressure:** Not pertinent
**9.7 Specific Gravity:** 1.2 at 20°C (liquid)
**9.8 Liquid Surface Tension:** 31.2 dynes/cm = 0.0312 N/m at 24°C
**9.9 Liquid Water Interfacial Tension:** 23.8 dynes/cm = 0.0238 N/m at 24°C
**9.10 Vapor (Gas) Specific Gravity:** Not pertinent
**9.11 Ratio of Specific Heats of Vapor (Gas):** (est.) 1.116
**9.12 Latent Heat of Vaporization:** (est.) 113 Btu/lb = 62.8 cal/g = 2.63 X $10^5$ J/kg
**9.13 Heat of Combustion:** (est.) 6900 Btu/lb = 3900 cal/g = 160 X $10^5$ 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:** 4.0 psia

**NOTES**

# 1,3-DICHLOROPROPENE

DPU

| 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 |
| 34 | 76.089 | 32 | 0.478 | | C | 46 | 0.938 |
| 36 | 76.020 | 34 | 0.478 | | U | 48 | 0.924 |
| 38 | 75.950 | 36 | 0.478 | | R | 50 | 0.911 |
| 40 | 75.879 | 38 | 0.478 | | R | 52 | 0.898 |
| 42 | 75.809 | 40 | 0.478 | | E | 54 | 0.885 |
| 44 | 75.740 | 42 | 0.478 | | N | 56 | 0.872 |
| 46 | 75.669 | 44 | 0.478 | | T | 58 | 0.860 |
| 48 | 75.599 | 46 | 0.478 | | L | 60 | 0.848 |
| 50 | 75.530 | 48 | 0.478 | | Y | 62 | 0.836 |
| 52 | 75.459 | 50 | 0.478 | | | 64 | 0.824 |
| 54 | 75.389 | 52 | 0.478 | | N | 66 | 0.813 |
| 56 | 75.320 | 54 | 0.478 | | O | 68 | 0.802 |
| 58 | 75.250 | 56 | 0.478 | | T | 70 | 0.791 |
| 60 | 75.179 | 58 | 0.478 | | | 72 | 0.780 |
| 62 | 75.120 | 60 | 0.478 | | A | 74 | 0.770 |
| 64 | 75.049 | 62 | 0.478 | | V | 76 | 0.760 |
| 66 | 74.980 | 64 | 0.478 | | A | 78 | 0.750 |
| 68 | 74.910 | 66 | 0.478 | | I | 80 | 0.740 |
| 70 | 74.839 | | | | L | 82 | 0.730 |
| 72 | 74.770 | | | | A | 84 | 0.721 |
| 74 | 74.700 | | | | B | 86 | 0.712 |
| 76 | 74.629 | | | | L | 88 | 0.703 |
| 78 | 74.559 | | | | E | 90 | 0.694 |
| 80 | 74.490 | | | | | 92 | 0.685 |
| 82 | 74.419 | | | | | 94 | 0.677 |
| 84 | 74.349 | | | | | 96 | 0.668 |

| 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 |
| | C | 35 | 0.834 | 35 | 0.01743 | 30 | 0.163 |
| | U | 40 | 0.953 | 40 | 0.01972 | 40 | 0.165 |
| | R | 45 | 1.087 | 45 | 0.02226 | 50 | 0.167 |
| | R | 50 | 1.236 | 50 | 0.02507 | 60 | 0.170 |
| | E | 55 | 1.401 | 55 | 0.02815 | 70 | 0.172 |
| | N | 60 | 1.586 | 60 | 0.03155 | 80 | 0.174 |
| | T | 65 | 1.790 | 65 | 0.03527 | 90 | 0.176 |
| | L | 70 | 2.016 | 70 | 0.03935 | 100 | 0.178 |
| | Y | 75 | 2.265 | 75 | 0.04380 | 110 | 0.180 |
| | | 80 | 2.540 | 80 | 0.04866 | 120 | 0.183 |
| | N | 85 | 2.842 | 85 | 0.05395 | 130 | 0.185 |
| | O | 90 | 3.174 | 90 | 0.05969 | 140 | 0.187 |
| | T | 95 | 3.537 | 95 | 0.06593 | 150 | 0.189 |
| | | 100 | 3.934 | 100 | 0.07267 | 160 | 0.191 |
| | A | 105 | 4.368 | 105 | 0.07997 | 170 | 0.193 |
| | V | 110 | 4.840 | 110 | 0.08784 | 180 | 0.195 |
| | A | 115 | 5.354 | 115 | 0.09632 | 190 | 0.197 |
| | I | 120 | 5.912 | 120 | 0.10540 | 200 | 0.199 |
| | L | | | | | 210 | 0.201 |
| | A | | | | | 220 | 0.203 |
| | B | | | | | 230 | 0.205 |
| | L | | | | | 240 | 0.207 |
| | E | | | | | 250 | 0.208 |
| | | | | | | 260 | 0.210 |