1,1-DICHLORO-1-NITROETHANE

CAUTIONARY RESPONSE INFORMATION

<table>
<thead>
<tr>
<th>Common Synonyms</th>
<th>Liquid</th>
<th>Colorless</th>
<th>Unpleasant odor that causes tears</th>
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</table>

**Fire**
COMBUSTIBLE.

Wear full protective clothing and self-contained breathing apparatus.

Extinguish with dry chemical, CO₂, or alcohol foam.

**Exposure**

CALL FOR MEDICAL AID.

Move victim to fresh air.

Remove contaminated clothing and shoes.

Wash affected areas with plenty of soap and water.

IF IN EYES, hold eyelids open and flush with plenty of water.

IF SWALLOWED and victim is CONSCIOUS, have victim drink water, then induce vomiting.

If breathing has stopped, perform artificial respiration.

IF IN EYES, hold eyelids open and flush with plenty of water.

Keep victim warm and quiet.

**Water**

Effects 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.

**3. HEALTH HAZARDS**

3.1 Personal Protective Equipment: Impermeable clothing, gloves, and face shields. In enclosed areas where concentrations could exceed 10 ppm, use self-contained breathing apparatus.

3.2 Symptoms Following Exposure: High concentrations cause lacrimation, increased nasal secretions, coughing, pulmonary edema, and weakness in animals. No human experience is reported.

3.3 Treatment of Exposure: Call for medical aid. EYES: Flush immediately with copious amounts of water, lifting the lids occasionally. SKIN: Wash the contaminated area with soap and water. Remove contaminated clothing. INGESTION: If victim is conscious, give large quantities of water immediately. After swallowing the water, induce vomiting. If not conscious, do nothing except keep victim warm and quiet.

3.4 TLV-TWA: 2 ppm

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: Exposure of animals produced severe irritation of lungs with severe breathing difficulties, which may be delayed in onset. Liver, heart, kidney, and blood vessel damage were also reported in animals.

3.10 Vapor (Gas): Irritant Characteristics: Vapors cause moderate irritation such that personnel will find concentrations unpleasant. The effect is temporary.

3.11 Liquid or Solid Characteristics: Causes smarting of the skin and first-degree burns on short exposure; may cause second-degree burns on long exposure.

3.12 Odor Threshold: Currently not available

3.13 IDLH Value: 25 ppm

3.14 OSHA PEL-TWA: Not listed.

3.15 OSHA PEL-STEL: Not listed.

3.16 OSHA PEL-Ceiling: 10 ppm

3.17 EPA AEL: Not listed

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 42; Nitrocompounds

2.2 Formula: CH₂CNNO₂

2.3 IMO/UN Designation: Not listed.

2.4 DOT ID No.: Not listed.

2.5 CAS Registry No.: Currently not available

2.6 NAEHS Guide No.: 163

2.7 Standard Industrial Trade Classification: 51138

4. FIRE HAZARDS

4.1 Flash Point: 136°F C.C.

4.2 Flammable Limits in Air: Currently not available

4.3 Fire Extinguishing Agents: Dry chemical, carbon dioxide, or alcohol foam.

4.4 Fire Extinguishing Agents Not To Be Used: Water.

4.5 Special Hazards of Combustion: Products: Toxic gases and vapors, such as nitrogen oxides, hydrogen chloride, and carbon monoxide, may be released in a fire.

4.6 Behavior in Fire: Currently not available

4.7 Auto Ignition Temperature: Currently not available

4.8 Electrical Hazards: Currently not available

4.9 Burning Rate: Currently not available

4.10 Adiabatic Flame Temperature: Currently not available

4.11 Stoichiometric Air to Fuel Ratio: 11.9 (Calc.)

4.12 Flame Temperature: Currently not available

4.13 Combustion Molar Ratio (Reactant to Product): 5.0 (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: Contact with strong oxidizers may cause fires and explosions.

5.3 Stability During Transport: Stable.

5.4 Neutralizing Agents for Acids and Caustics: Not pertinent.

5.5 Polymerization: Not pertinent.

5.6 Initiator of Polymerization: Not pertinent.

6. WATER POLLUTION

6.1 Aquatic Toxicity: Currently not available

6.2 Waterfowl Toxicity: Currently not available

6.3 Biological Oxygen Demand (BOD): Currently not available

6.4 Food Chain Concentration Potential: Not currently available

6.5 GESAMP Hazard Profile: Not listed

7. SHIPPING INFORMATION

7.1 Grades of Purity: Technical grades.

7.2 Storage Temperature: Ambient.

7.3 Inert Atmosphere: No requirement.

7.4 Venting: Not listed.

7.5 IMO Pollution Category: Currently not available

7.6 Ship Type: Currently not available

7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Not listed.

8.2 49 CFR Class: Not pertinent.

8.3 49 CFR Package Group: Not listed.

8.4 Marine Pollutant: No

8.5 NPFA Hazard Classification: No

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15°C and 1 atm: Liquid

9.2 Molecular Weight: 144

9.3 Boiling Point at 1 atm: 257°F = 125°C = 290 K

9.4 Freezing Point: Currently not available

9.5 Critical Temperature: Currently not available

9.6 Critical Pressure: Currently not available

9.7 Specific Gravity: 1.42

9.8 Liquid Surface Tension: Currently not available

9.9 Liquid Water Interfacial Tension: Currently not available

9.10 Vapor Specific Gravity: 5.0

9.11 Ratio of Specific Heats of Vapor (Gas): Currently not available

9.12 Lateral Heat of Vaporization: Currently not available

9.13 Heat of Combustion: Currently not available

9.14 Heat of Decomposition: Currently not available

9.15 Heat of Solution: Currently not available

9.16 Heat of Polymerization: Not pertinent

9.17 Heat of Fusion: Currently not available

9.18 Limiting Value: Currently not available

9.19 Vapour Pressure: Currently not available

NOTES

JUNE 1999
<table>
<thead>
<tr>
<th>Temperature (degrees F)</th>
<th>Pounds per cubic foot</th>
<th>Temperature (degrees F)</th>
<th>British thermal unit per pound-F</th>
<th>Temperature (degrees F)</th>
<th>Centipoise</th>
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<table>
<thead>
<tr>
<th>Temperature (degrees F)</th>
<th>Pounds per 100 pounds of water</th>
<th>Temperature (degrees F)</th>
<th>Pounds per square inch</th>
<th>Temperature (degrees F)</th>
<th>Pounds per cubic foot</th>
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JUNE 1999