2,2-DICHLOROPROPANOIC ACID

DLP

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
Dalapon
2,2-Dichloropropionic acid

Liquid Colorless Acrid odor

Sinks and mixes with water.

Keep people away. AVOID CONTACT WITH LIQUID.
Avoid inhalation.
Restrict access.
Wear goggles and self-contained breathing apparatus.
Call fire department.
Notify local health and pollution control agencies.
Protect water intakes.

Fire

Combustible.
Extinguish with dry chemical, alcohol foam, or carbon dioxide.

Exposure

CALL FOR MEDICAL AID.

VAPOR
Irritating to eyes, nose and throat.
Move to fresh air.
IF IN EYES, hold eyelids open and flush with plenty of water.
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.
DO NOT INDUCE VOMITING.

Water Pollution

HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS.
May be dangerous if it enters water intakes.
Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse
Stop discharge
Chemical and Physical Treatment:
Neutralize

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: CH_3CCl_2COOH
2.3 IMO/UN Designation: 8/1760
2.4 DOT ID No.: 1760
2.5 CAS Registry No.: 75-99-0
2.6 NAERG Guide No.: 154
2.7 Standard Industrial Trade Classification: 51377

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Protective clothing, including goggles, gloves and boots; self-contained breathing apparatus
3.2 Symptoms Following Exposure: Inhalation causes severe irritation of nose, mouth, and lungs. Ingestion causes severe irritation of mouth and stomach. Contact with eyes or skin causes irritation and burns.
3.3 Treatment of Exposure: INHALATION: move to fresh air; if patient is not breathing, give artificial respiration; keep patient quiet; get medical attention. INGESTION: give large amounts of water; get medical attention. EYES: flush with water for at least 15 min.; get medical attention. SKIN: flush with water, get medical attention if irritation persists.
3.4 TLV-TWA: 1 ppm
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 2; oral LD_{50} = 3.65 g/kg (mouse), 7.57 g/kg (rat)
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Currently not available
3.10 Vapor (Gas) Irritant Characteristics: Currently not available
3.11 Liquid or Solid Characteristics: Currently not available
3.12 Odor Threshold: 2,500 mg/m^3
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: Currently not available
4.2 Flammable Limits in Air: Currently not available
4.3 Fire Extinguishing Agents: Dry chemical, alcohol foam, carbon dioxide
4.4 Fire Extinguishing Agents Not to Be Used: Water may be ineffective.
4.5 Special Hazards of Combustion Products: Irritating fumes of hydrochloric acid may form in fire.
4.6 Behavior in Fire: Volatilizes with steam
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 Stoichometric Air to Fuel Ratio: 11.9 (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: Reacts slowly to form hydrochloric and pyruvic acids. The reaction is not hazardous.
5.2 Reactivity with Common Materials: Very corrosive to aluminum and copper alloys. Flammable and explosive hydrogen gas may form in enclosed spaces.
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Flush with water; rinse with dilute sodium bicarbonate or soda ash solution.
5.5 Polymerization: Not pertinent
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity: 105 ppm/96 hr/bluegill/TL_m/fresh water
1 ppm/48 hr/brown shrimp/TL_m/salt water
6.2 Waterfowl Toxicity: >5,000 ppm LC_{50}
6.3 Biological Oxygen Demand (BOD): 0.04 lb/lb, 5 days, unacclimated seed 0.32 lb/lb, 5 days, acclimated seed
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: X

7. SHIPPING INFORMATION

7.1 Grades of Purity: Technical grade, 90%; solid formulations of sodium and magnesium salts are sometimes referred to as Dalapon and are much less corrosive.
7.2 Storage Temperature: 70-90°F
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open
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 listed.
8.3 49 CFR Package Group: Not listed.
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification: Not listed
8.6 EPA Reportable Quantity: Not listed.
8.7 EPA Pollution Category: Not listed.
8.8 RCRA Waste Number: Not listed
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: 143
9.3 Boiling Point at 1 atm: 374°F = 190°C = 463°K
9.4 Freezing Point: 46°F = 8°C = 281°K
9.5 Critical Temperature: Currently not available
9.6 Critical Pressure: Currently not available
9.7 Specific Gravity: 1.39 at 23°C (liquid)
9.8 Liquid Surface Tension: Currently not available
9.9 Liquid Water Interfacial Tension: Not pertinent
9.10 Vapor (Gas) Specific Gravity: 4.9
9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
9.12 Latent Heat of Vaporization: Currently not available
9.13 Heat of Combustion: Currently not available
9.14 Heat of Decomposition: Not pertinent
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 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
73	86.770		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT

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
	MISCIBLE	160	0.098	160	0.00211		NOT PERTINENT
		170	0.134	170	0.00283		
		180	0.181	180	0.00376		
		190	0.242	190	0.00495		
		200	0.320	200	0.00647		
		210	0.421	210	0.00838		
		220	0.549	220	0.01077		
		230	0.711	230	0.01373		
		240	0.913	240	0.01739		
		250	1.165	250	0.02188		
		260	1.477	260	0.02733		
		270	1.859	270	0.03394		
		280	2.326	280	0.04189		
		290	2.893	290	0.05140		
		300	3.577	300	0.06272		
		310	4.399	310	0.07613		
		320	5.380	320	0.09193		
		330	6.548	330	0.11050		
		340	7.930	340	0.13210		
		350	9.558	350	0.15730		
		360	11.470	360	0.18640		
		370	13.700	370	0.22000		
		380	16.300	380	0.25850		
		390	19.310	390	0.30270		