

DIMETHYLDICHLOROSILANE

DMD

CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Liquid	Colorless	Sharp irritating odor
	Reacts violently with water. Irritating gas is produced on contact with water.		
<p style="color: red; margin: 0;">Evacuate. Keep people away. Avoid contact with liquid and vapor. Avoid inhalation. Shut off ignition sources. Call fire department. Wear goggles and self-contained breathing apparatus. Notify local health and pollution control agencies. Protect water intakes.</p>			
Fire	<p>FLAMMABLE. POISONOUS GASES MAY BE PRODUCED IN FIRE. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Extinguish with dry chemicals or carbon dioxide. DO NOT USE WATER OR FOAM ON FIRE.</p>		
Exposure	<p>Call for medical aid.</p> <p>VAPOR Irritating to eyes, nose and throat. Move victim to fresh air. If breathing is difficult, give oxygen.</p> <p>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.</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

- Dilute and disperse
- Stop discharge
- Chemical and Physical Treatment:
- Neutralize
- Do not burn
- Do not add water to undissolved material

2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: Not listed.
- 2.2 Formula: (CH₃)₂SiCl₂
- 2.3 IMO/UN Designation: 3.2/1162
- 2.4 DOT ID No.: 1162
- 2.5 CAS Registry No.: 75-78-5
- 2.6 NAERG Guide No.: 155
- 2.7 Standard Industrial Trade Classification: 51550

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Acid-vapor type respiratory protection; rubber gloves; chemical worker's goggles; other protective equipment as necessary to protect skin and eyes.
- 3.2 **Symptoms Following Exposure:** Inhalation irritates mucous membranes. Contact with liquid causes severe burns of eyes and skin. Ingestion causes severe burns of mouth and stomach.
- 3.3 **Treatment of Exposure:** INHALATION: remove from exposure and support respiration; call physician if needed. EYES: flush with water for 15 min.; obtain medical attention immediately. SKIN: flush with water; obtain medical attention immediately. INGESTION: if victim is conscious, give large amounts of water followed by milk or milk of magnesia.
- 3.4 **TLV-TWA:** Not listed.
- 3.5 **TLV-STEL:** Not listed.
- 3.6 **TLV-Ceiling:** Not listed.
- 3.7 **Toxicity by Ingestion:** Grade 3; LD₅₀ = 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 severe irritation of eyes and throat and can cause eye and lung injury. They cannot be tolerated even at low concentrations.
- 3.11 **Liquid or Solid Characteristics:** Severe skin irritant. Causes second-and third-degree burns on short contact and is very injurious to the eyes.
- 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:** 15°F O.C.
- 4.2 **Flammable Limits in Air:** 1.4%-9.5%
- 4.3 **Fire Extinguishing Agents:** Dry chemical, carbon dioxide
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Water or foam
- 4.5 **Special Hazards of Combustion Products:** Hydrogen chloride and phosgene gases may form; both are toxic and irritating.
- 4.6 **Behavior in Fire:** Difficult to extinguish. Re-ignition may occur. Contact with water applied to adjacent fires produces toxic and irritating fumes.
- 4.7 **Auto Ignition Temperature:** Above 750°F
- 4.8 **Electrical Hazards:** Currently not available
- 4.9 **Burning Rate:** 3.3 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:** Reacts vigorously with water to generate hydrogen chloride (hydrochloric acid).
- 5.2 **Reactivity with Common Materials:** Will react with surface moisture to generate hydrogen chloride, which is corrosive to common metals.
- 5.3 **Stability During Transport:** Stable
- 5.4 **Neutralizing Agents for Acids and Caustics:** Sodium bicarbonate or lime
- 5.5 **Polymerization:** Not pertinent
- 5.6 **Inhibitor 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:** None
- 6.5 **GESAMP Hazard Profile:**
Bioaccumulation: 0
Damage to living resources: 1
Human Oral hazard: 1
Human Contact hazard: II
Reduction of amenities: XX

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 99+%
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Pressure-vacuum
- 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:** 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).....	3
Flammability (Red).....	3
Instability (Yellow).....	1
- 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:** 129
- 9.3 **Boiling Point at 1 atm:** 158.8°F = 70.5°C = 343.7°K
- 9.4 **Freezing Point:** -122°F = -86°C = 187°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 1.07 at 25°C (liquid)
- 9.8 **Liquid Surface Tension:** 20.1 dynes/cm = 0.0201 N/m at 20°C
- 9.9 **Liquid Water Interfacial Tension:** Not pertinent
- 9.10 **Vapor (Gas) Specific Gravity:** 4.4
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** Currently not available
- 9.12 **Latent Heat of Vaporization:** 100 Btu/lb = 58 cal/g = 2.4 X 10⁵ J/kg
- 9.13 **Heat of Combustion:** (est.) -6,000 Btu/lb = -3,300 cal/g = -140 X 10⁵ J/kg
- 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

DIMETHYLDICHLOROSILANE

DMD

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	67.969	52	0.400	52	0.901	52	0.945
36	67.900	54	0.400	54	0.901	54	0.928
38	67.830	56	0.400	56	0.901	56	0.912
40	67.759	58	0.400	58	0.901	58	0.896
42	67.690	60	0.400	60	0.901	60	0.880
44	67.620	62	0.400	62	0.901	62	0.865
46	67.549	64	0.400	64	0.901	64	0.850
48	67.490	66	0.400	66	0.901	66	0.835
50	67.419	68	0.400	68	0.901	68	0.821
52	67.349	70	0.400	70	0.901	70	0.807
54	67.280	72	0.400	72	0.901	72	0.794
56	67.209	74	0.400	74	0.901	74	0.780
58	67.139	76	0.400	76	0.901	76	0.768
60	67.070	78	0.400	78	0.901	78	0.755
62	67.000	80	0.400	80	0.901	80	0.743
64	66.929	82	0.400	82	0.901	82	0.731
66	66.860	84	0.400	84	0.901	84	0.719
68	66.790	86	0.400	86	0.901	86	0.708
70	66.719			88	0.901		
72	66.650						
74	66.580						
76	66.509						
78	66.440						
80	66.379						
82	66.309						
84	66.240						

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
	R	55	1.574	55	0.03675		N
	E	60	1.788	60	0.04135		O
	A	65	2.027	65	0.04642		T
	C	70	2.292	70	0.05199		
	T	75	2.585	75	0.05810		P
	S	80	2.910	80	0.06479		E
		85	3.268	85	0.07210		R
		90	3.662	90	0.08007		T
		95	4.096	95	0.08874		I
		100	4.572	100	0.09817		N
		105	5.093	105	0.10840		E
		110	5.663	110	0.11950		N
		115	6.285	115	0.13140		T
		120	6.963	120	0.14440		
		125	7.701	125	0.15830		
		130	8.502	130	0.17330		
		135	9.371	135	0.18940		
		140	10.310	140	0.20660		
		145	11.330	145	0.22520		
		150	12.430	150	0.24500		
		155	13.610	155	0.26610		