

METHYLDICHLOROSILANE

MCS

CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Liquid	Colorless	Sharp irritating odor
	Reacts violently with water. Irritating gas is produced on contact with water.		
<p>Evacuate. KEEP PEOPLE AWAY. AVOID CONTACT WITH LIQUID AND VAPOR. Wear goggles and self-contained breathing apparatus. Shut off ignition sources. Call fire department. Notify local health and pollution control agencies.</p>			
Fire	<p>FLAMMABLE. POISONOUS GASES MAY BE PRODUCED IN FIRE. Containers may explode 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. DO NOT USE WATER OR FOAM ON ADJACENT FIRES.</p>		
Exposure	<p>Call for medical aid.</p> <p>VAPOR Irritating to eyes, nose and throat. If inhaled will cause difficult breathing. Move victim to fresh air. If breathing has stopped, give artificial respiration. 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

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** Not listed.
2.2 **Formula:** CH₃SiHCl₂
2.3 **IMO/UN Designation:** 3.2/1242
2.4 **DOT ID No.:** 1242
2.5 **CAS Registry No.:** 75-54-7
2.6 **NAERG Guide No.:** 139
2.7 **Standard Industrial Trade Classification:** 51550

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Full protective clothing; 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 causes irritation of respiratory tract; heavy exposure can cause pulmonary edema. Contact of liquid with skin or eyes causes severe burns. Ingestion causes burns of mouth and stomach.
- 3.3 **Treatment of Exposure:** Get medical attention following all exposures to this compound. INHALATION: remove victim from exposure; if breathing has stopped, begin artificial respiration. EYES: flush with water for 15 min. SKIN: flush with water. INGESTION: do NOT induce vomiting; give large amounts of water.
- 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:** -14°F O.C.
4.2 **Flammable Limits in Air:** 6%-55%
4.3 **Fire Extinguishing Agents:** Dry chemical or carbon dioxide
4.4 **Fire Extinguishing Agents Not to Be Used:** Water, foam
4.5 **Special Hazards of Combustion Products:** Toxic hydrogen chloride and phosgene gases may be formed.
4.6 **Behavior in Fire:** Difficult to extinguish; re-ignition may occur. Contact with water applied to adjacent fires will generate irritating hydrogen chloride gas.
4.7 **Auto Ignition Temperature:** >600
4.8 **Electrical Hazards:** Currently not available
4.9 **Burning Rate:** 3.0 mm/min.
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

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 97%
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:** Dangerous When Wet
8.2 **49 CFR Class:** 4.3
8.3 **49 CFR Package Group:** I
8.4 **Marine Pollutant:** No
8.5 **NFPA Hazard Classification:**
- | Category | Classification |
|---------------------------|----------------|
| Health Hazard (Blue)..... | 3 |
| Flammability (Red)..... | 3 |
| Instability (Yellow)..... | 2 |
| Special (White)..... | W |
- 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

5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** Reacts violently to form hydrogen chloride (hydrochloric acid)
5.2 **Reactivity with Common Materials:** Reacts with surface moisture to evolve hydrogen chloride, which is corrosive to common metals.
5.3 **Stability During Transport:** Stable
5.4 **Neutralizing Agents for Acids and Caustics:** Flood with water and rinse with sodium bicarbonate or lime solution.
5.5 **Polymerization:** Not pertinent
5.6 **Inhibitor of Polymerization:** Not pertinent

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Liquid
9.2 **Molecular Weight:** 115
9.3 **Boiling Point at 1 atm:** 106.7°F = 41.5°C = 314.7°K
9.4 **Freezing Point:** -135°F = -93°C = 180°K
9.5 **Critical Temperature:** Not pertinent
9.6 **Critical Pressure:** Not pertinent
9.7 **Specific Gravity:** 1.11 at 25°C (liquid)
9.8 **Liquid Surface Tension:** (est.) 35 dynes/cm = 0.035 N/m at 20°C
9.9 **Liquid Water Interfacial Tension:** Not pertinent
9.10 **Vapor (Gas) Specific Gravity:** 4
9.11 **Ratio of Specific Heats of Vapor (Gas):** Currently not available
9.12 **Latent Heat of Vaporization:** 106 Btu/lb = 59 cal/g = 2.5 X 10⁵ J/kg
9.13 **Heat of Combustion:** (est.) -4,700 Btu/lb = -2,600 cal/g = -110 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

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: I
Reduction of amenities: X

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
34	70.469	51	0.350	52	0.839	51	9.018
36	70.400	52	0.350	54	0.839	52	8.773
38	70.330	53	0.350	56	0.839	53	8.535
40	70.259	54	0.350	58	0.839	54	8.305
42	70.190	55	0.350	60	0.839	55	8.082
44	70.120	56	0.350	62	0.839	56	7.865
46	70.049	57	0.350	64	0.839	57	7.656
48	69.980	58	0.350	66	0.839	58	7.452
50	69.910	59	0.350	68	0.839	59	7.255
52	69.839	60	0.350	70	0.839	60	7.064
54	69.770	61	0.350	72	0.839	61	6.879
56	69.700	62	0.350	74	0.839	62	6.699
58	69.639	63	0.350	76	0.839	63	6.524
60	69.570	64	0.350	78	0.839	64	6.355
62	69.500	65	0.350	80	0.839	65	6.190
64	69.429	66	0.350	82	0.839	66	6.031
66	69.360	67	0.350	84	0.839	67	5.876
68	69.290	68	0.350	86	0.839	68	5.726
70	69.219	69	0.350	88	0.839	69	5.580
72	69.150	70	0.350			70	5.438
74	69.080	71	0.350			71	5.301
76	69.009	72	0.350			72	5.167
78	68.940	73	0.350			73	5.037
80	68.870	74	0.350			74	4.911
82	68.799	75	0.350			75	4.789
84	68.730	76	0.350			76	4.670

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	70	6.841	70	0.13840		N
	E	72	7.149	72	0.14400		O
	A	74	7.467	74	0.14990		T
	C	76	7.797	76	0.15590		
	T	78	8.139	78	0.16220		P
	S	80	8.493	80	0.16860		E
		82	8.860	82	0.17520		R
		84	9.240	84	0.18210		T
		86	9.633	86	0.18910		I
		88	10.040	88	0.19640		N
		90	10.460	90	0.20390		E
		92	10.900	92	0.21160		N
		94	11.350	94	0.21950		T
		96	11.810	96	0.22770		
		98	12.290	98	0.23610		
		100	12.790	100	0.24480		
		102	13.300	102	0.25370		
		104	13.830	104	0.26290		
		106	14.380	106	0.27230		
		108	14.940	108	0.28200		
		110	15.530	110	0.29200		
		112	16.130	112	0.30220		