

ETHYLDICHLOROSILANE

ECS

CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Liquid Colorless Sharp, irritating odor
	Reacts violently with water. Irritating gas is produced on contact with water.
	Evacuate. Keep people away. Avoid contact with liquid. Avoid inhalation. Shut off ignition sources. Call fire department. Notify local health and pollution control agencies. Protect water intakes.
Fire	FLAMMABLE. POISONOUS GASES MAY BE PRODUCED IN FIRE. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Wear chemical protective suit with self-contained breathing apparatus. DO NOT USE WATER OR FOAM ON FIRE.
Exposure	Call for medical aid. VAPOR Irritating to eyes, nose and throat. Move victim to fresh air. 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	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

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

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: C₂H₄SiHCl₂
2.3 IMO/UN Designation: 3.2/1183
2.4 DOT ID No.: 1183
2.5 CAS Registry No.: 1789-58-8
2.6 NAERG Guide No.: 139
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 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:** Get medical attention following all exposures to this compound. INHALATION: remove to fresh air; give artificial respiration if required. EYES: flush with water for 15 min. SKIN: flush with water. INGESTION: do NOT induce vomiting; 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:** 30°F O.C.
4.2 **Flammable Limits in Air:** 2.9% (LFL)
4.3 **Fire Extinguishing Agents:** Dry chemical
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 produces irritating hydrogen chloride fumes and flammable hydrogen gas.
4.7 **Auto Ignition Temperature:** Currently not available
4.8 **Electrical Hazards:** Currently not available
4.9 **Burning Rate:** 3.2 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, evolving hydrogen chloride (hydrochloric acid)
5.2 **Reactivity with Common Materials:** Reaction with surface moisture will generate hydrogen chloride, which corrodes common metals.
5.3 **Stability During Transport:** Stable
5.4 **Neutralizing Agents for Acids and Caustics:** Flood with water, rinse with sodium bicarbonate or lime solution.
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:** Commercial
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)..... | 0 |
- 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:** 129.1
9.3 **Boiling Point at 1 atm:** 165°F = 74°C = 347°K
9.4 **Freezing Point:** Not pertinent
9.5 **Critical Temperature:** Not pertinent
9.6 **Critical Pressure:** Not pertinent
9.7 **Specific Gravity:** 1.092 at 20°C (liquid)
9.8 **Liquid Surface Tension:** 21.7 dynes/cm = 0.0217 Nm at 20°C
9.9 **Liquid Water Interfacial Tension:** Not pertinent
9.10 **Vapor (Gas) Specific Gravity:** 4.5
9.11 **Ratio of Specific Heats of Vapor (Gas):** Currently not available
9.12 **Latent Heat of Vaporization:** (est.) 104 Btu/lb = 57.8 cal/g = 2.42 X 10⁵ J/kg
9.13 **Heat of Combustion:** (est.) -6,500 Btu/lb = -3,600 cal/g = -150 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

ETHYLDICHLOROSILANE

ECS

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
28	69.719	52	0.451	52	0.839	50	0.848
30	69.639	54	0.452	54	0.839	51	0.824
32	69.570	56	0.453	56	0.839	52	0.802
34	69.490	58	0.454	58	0.839	53	0.780
36	69.410	60	0.456	60	0.839	54	0.759
38	69.339	62	0.457	62	0.839	55	0.739
40	69.259	64	0.458	64	0.839	56	0.719
42	69.190	66	0.459	66	0.839	57	0.700
44	69.110	68	0.460	68	0.839	58	0.681
46	69.030	70	0.461	70	0.839	59	0.663
48	68.959	72	0.462	72	0.839	60	0.646
50	68.879	74	0.463	74	0.839	61	0.629
52	68.809	76	0.464	76	0.839	62	0.612
54	68.730	78	0.466	78	0.839	63	0.596
56	68.660	80	0.467	80	0.839	64	0.581
58	68.580	82	0.468	82	0.839	65	0.566
60	68.509	84	0.469	84	0.839	66	0.551
62	68.429	86	0.470	86	0.839	67	0.537
64	68.360			88	0.839	68	0.523
66	68.280					69	0.510
68	68.209					70	0.497
70	68.129					71	0.485
72	68.059					72	0.472
74	67.980					73	0.461
76	67.910					74	0.449
78	67.830					75	0.438

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	1.402	55	0.03275		N
	E	60	1.593	60	0.03686		O
	A	65	1.806	65	0.04139		T
	C	70	2.042	70	0.04636		
	T	75	2.304	75	0.05182		P
	S	80	2.594	80	0.05780		E
		85	2.914	85	0.06433		R
		90	3.266	90	0.07146		T
		95	3.654	95	0.07922		I
		100	4.079	100	0.08765		N
		105	4.545	105	0.09680		E
		110	5.054	110	0.10670		N
		115	5.611	115	0.11740		T
		120	6.217	120	0.12900		
		125	6.877	125	0.14150		
		130	7.594	130	0.15490		
		135	8.371	135	0.16930		
		140	9.213	140	0.18480		
		145	10.120	145	0.20140		
		150	11.110	150	0.21910		
		155	12.170	155	0.23810		
		160	13.310	160	0.25830		
		165	14.540	165	0.27990		
		170	15.860	170	0.30290		
		175	17.280	175	0.32740		