

SULFURYL CHLORIDE

SCL

CAUTIONARY RESPONSE INFORMATION

Common Synonyms

Watery liquid Colorless to light yellow Acrid odor

Mixes and reacts violently with water. Poisonous gas is produced.

Evacuate.
Keep people away. Avoid contact with liquid and gas.
Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves).
Notify local health and pollution control agencies.
Protect water intakes.

Fire

Not flammable.
Flammable gas may be produced on contact with metals.

Exposure

CALL FOR MEDICAL AID.

VAPOR

Irritating to eyes, nose and throat.
If inhaled, will cause coughing, difficult breathing, or loss of consciousness.
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 dissolved material
Stop discharge
Chemical and Physical Treatment:
Neutralize
Do not add water to undissolved material

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: SO_2Cl_2
2.3 IMO/UN Designation: 8.0/1834
2.4 DOT ID No.: 1834
2.5 CAS Registry No.: 7791-25-5
2.6 NAERG Guide No.: 137
2.7 Standard Industrial Trade Classification: 52241

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Chemical goggles and face shield; mask with acid-type canister; rubber gloves and boots.
- 3.2 **Symptoms Following Exposure:** Vapors cause severe irritation of eyes and respiratory system. Liquid burns eyes and skin. If ingested, can cause severe burns of mouth and stomach.
- 3.3 **Treatment of Exposure:** Call a doctor. INHALATION: remove to fresh air; administer artificial respiration if required. INGESTION: give water or milk; do NOT induce vomiting. EYES: flush with water for at least 15 min. SKIN: wash with 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:** Currently not available
3.8 **Toxicity by Inhalation:** Currently not available.
3.9 **Chronic Toxicity:** None
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:** Fairly severe skin irritant; may cause pain and second- degree burns after a few minutes' contact.
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:**
Not flammable
- 4.2 **Flammable Limits in Air:** Not flammable
- 4.3 **Fire Extinguishing Agents:** Not pertinent
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Water applied to adjacent fires should be handled carefully.
- 4.5 **Special Hazards of Combustion Products:** Not pertinent
- 4.6 **Behavior in Fire:** Toxic and irritating gases are generated.
- 4.7 **Auto Ignition Temperature:** Not flammable
- 4.8 **Electrical Hazards:** Not pertinent
- 4.9 **Burning Rate:** Not flammable
- 4.10 **Adiabatic Flame Temperature:** Currently not available
- 4.11 **Stoichiometric Air to Fuel Ratio:** Not pertinent.
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** Not pertinent.
- 4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** Reacts vigorously with water, releasing hydrogen chloride fumes and forming sulfuric acid.
- 5.2 **Reactivity with Common Materials:**
Acids formed by reaction with moisture attack metals and liberate flammable hydrogen gas.
- 5.3 **Stability During Transport:** Stable
- 5.4 **Neutralizing Agents for Acids and Caustics:** Acid formed by reaction with water can be neutralized by limestone, lime, or soda ash.
- 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):** None
- 6.4 **Food Chain Concentration Potential:** None
- 6.5 **GESAMP Hazard Profile:**
Bioaccumulation: 0
Damage to living resources: (2)
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:** Corrosive material
- 8.2 **49 CFR Class:** 8
- 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)..... | 0 |
| 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

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Liquid
- 9.2 **Molecular Weight:** 134.97
- 9.3 **Boiling Point at 1 atm:** 156.4°F = 69.1°C = 342.3°K
- 9.4 **Freezing Point:** Not pertinent
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 1.67 at 20°C (liquid)
- 9.8 **Liquid Surface Tension:** Not pertinent
- 9.9 **Liquid Water Interfacial Tension:** Not pertinent
- 9.10 **Vapor (Gas) Specific Gravity:** 4.6
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** 1.122
- 9.12 **Latent Heat of Vaporization:** 89.1 Btu/lb = 49.5 cal/g = 2.07 X 10⁵ J/kg
- 9.13 **Heat of Combustion:** Not pertinent
- 9.14 **Heat of Decomposition:** Not pertinent
- 9.15 **Heat of Solution:** -885.5 Btu/lb = -491.9 cal/g = -20.58 X 10³ J/kg
- 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
35	106.500	55	0.230		N		N
40	106.200	60	0.230		O		O
45	105.799	65	0.230		T		T
50	105.400	70	0.230				
55	105.099	75	0.230		P		P
60	104.700	80	0.230		E		E
65	104.299	85	0.230		R		R
70	104.000	90	0.230		T		T
75	103.599	95	0.230		I		I
80	103.200	100	0.230		N		N
85	102.900	105	0.230		E		E
90	102.500	110	0.230		N		N
95	102.200	115	0.230		T		T
100	101.799	120	0.230				
105	101.400	125	0.230				
110	101.099	130	0.230				
115	100.700	135	0.230				
120	100.299	140	0.230				

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	0	0.289	0	0.00790	0	0.129
	E	10	0.401	10	0.01074	25	0.131
	A	20	0.550	20	0.01442	50	0.134
	C	30	0.744	30	0.01911	75	0.136
	T	40	0.995	40	0.02503	100	0.138
	S	50	1.315	50	0.03243	125	0.140
		60	1.719	60	0.04159	150	0.142
		70	2.225	70	0.05282	175	0.143
		80	2.853	80	0.06646	200	0.145
		90	3.624	90	0.08291	225	0.147
		100	4.566	100	0.10260	250	0.148
		110	5.705	110	0.12590	275	0.149
		120	7.074	120	0.15340	300	0.151
		130	8.707	130	0.18570	325	0.152
		140	10.640	140	0.22320	350	0.153
		150	12.930	150	0.26660	375	0.154
		160	15.600	160	0.31650	400	0.155
		170	18.710	170	0.37370	425	0.156
		180	22.320	180	0.43880	450	0.157
		190	26.480	190	0.51260	475	0.157
		200	31.260	200	0.59580	500	0.158
		210	36.710	210	0.68930	525	0.158
						550	0.159
						575	0.159
						600	0.159