

# SULFUR MONOCHLORIDE

SFM

CAUTIONARY RESPONSE INFORMATION				4. FIRE HAZARDS	7. SHIPPING INFORMATION								
Common Synonyms	Oily liquid	Yellow to red	Irritating sharp odor	<p>4.1 Flash Point: 266°F O.C. 245°F C.C.</p> <p>4.2 Flammable Limits in Air: Currently not available</p> <p>4.3 Fire Extinguishing Agents: Dry chemical, carbon dioxide, water spray</p> <p>4.4 Fire Extinguishing Agents Not to Be Used: Water reacts violently with compound.</p> <p>4.5 Special Hazards of Combustion Products: Toxic and corrosive fumes are evolved when heated.</p> <p>4.6 Behavior in Fire: Not pertinent</p> <p>4.7 Auto Ignition Temperature: 453°F</p> <p>4.8 Electrical Hazards: Not pertinent</p> <p>4.9 Burning Rate: Currently not available</p> <p>4.10 Adiabatic Flame Temperature: Currently not available</p> <p>4.11 Stoichiometric Air to Fuel Ratio: Not pertinent.</p> <p>4.12 Flame Temperature: Currently not available</p> <p>4.13 Combustion Molar Ratio (Reactant to Product): Not pertinent.</p> <p>4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed</p>	<p>7.1 Grades of Purity: Commercial material may contain 0-5% free sulfur.</p> <p>7.2 Storage Temperature: Ambient</p> <p>7.3 Inert Atmosphere: No requirement</p> <p>7.4 Venting: Pressure-vacuum</p> <p>7.5 IMO Pollution Category: Currently not available</p> <p>7.6 Ship Type: Currently not available</p> <p>7.7 Barge Hull Type: Currently not available</p>								
	<p>Evacuate. Keep people away. Avoid contact with liquid and vapor. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Call fire department. Notify local health and pollution control agencies. Protect water intakes.</p>												
Fire	<p>Combustible. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Extinguish with dry chemical, or carbon dioxide. Cool exposed containers with water. Water reacts violently with compound.</p>												
Exposure	<p>CALL FOR MEDICAL AID.</p> <p>VAPOR Irritating to eyes. Poisonous if inhaled. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>LIQUID Will burn skin and eyes. Poisonous 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>			<p>5. CHEMICAL REACTIVITY</p> <p>5.1 Reactivity with Water: Reacts violently with water to produce heat and hydrogen chloride fumes. The solution is strongly acid.</p> <p>5.2 Reactivity with Common Materials: The liquid dissolves rubber and plastics. After reaction with water, the strong acid formed attacks metals, generating flammable hydrogen gas.</p> <p>5.3 Stability During Transport: Stable</p> <p>5.4 Neutralizing Agents for Acids and Caustics: After reaction with water, the acid formed can be neutralized with lime or soda ash.</p> <p>5.5 Polymerization: Not pertinent</p> <p>5.6 Inhibitor of Polymerization: Not pertinent</p>	<p>8. HAZARD CLASSIFICATIONS</p> <p>8.1 49 CFR Category: Corrosive material</p> <p>8.2 49 CFR Class: 8</p> <p>8.3 49 CFR Package Group: I</p> <p>8.4 Marine Pollutant: No</p> <p>8.5 NFPA Hazard Classification:</p> <table> <thead> <tr> <th>Category</th> <th>Classification</th> </tr> </thead> <tbody> <tr> <td>Health Hazard (Blue)</td> <td>2</td> </tr> <tr> <td>Flammability (Red)</td> <td>1</td> </tr> <tr> <td>Instability (Yellow)</td> <td>1</td> </tr> </tbody> </table> <p>8.6 EPA Reportable Quantity: 1000 pounds</p> <p>8.7 EPA Pollution Category: C</p> <p>8.8 RCRA Waste Number: Not listed</p> <p>8.9 EPA FWPCA List: Yes</p>	Category	Classification	Health Hazard (Blue)	2	Flammability (Red)	1	Instability (Yellow)	1
Category	Classification												
Health Hazard (Blue)	2												
Flammability (Red)	1												
Instability (Yellow)	1												
Water Pollution	<p>Dangerous to aquatic life in high concentrations. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.</p>				<p>9. PHYSICAL &amp; CHEMICAL PROPERTIES</p> <p>9.1 Physical State at 15°C and 1 atm: Liquid</p> <p>9.2 Molecular Weight: 135.03</p> <p>9.3 Boiling Point at 1 atm: 280°F = 138°C = 411°K</p> <p>9.4 Freezing Point: -112°F = -80°C = 193°K</p> <p>9.5 Critical Temperature: Not pertinent</p> <p>9.6 Critical Pressure: Not pertinent</p> <p>9.7 Specific Gravity: 1.68 at 20°C (liquid)</p> <p>9.8 Liquid Surface Tension: Not pertinent</p> <p>9.9 Liquid Water Interfacial Tension: Not pertinent</p> <p>9.10 Vapor (Gas) Specific Gravity: Not pertinent</p> <p>9.11 Ratio of Specific Heats of Vapor (Gas): 1.129</p> <p>9.12 Latent Heat of Vaporization: 115 Btu/lb = 63.8 cal/g = 2.67 X 10<sup>5</sup> J/kg</p> <p>9.13 Heat of Combustion: Not pertinent</p> <p>9.14 Heat of Decomposition: Not pertinent</p> <p>9.15 Heat of Solution: -502.2 Btu/lb = -279.0 cal/g = 11.67 X 10<sup>5</sup> J/kg</p> <p>9.16 Heat of Polymerization: Not pertinent</p> <p>9.17 Heat of Fusion: Currently not available</p> <p>9.18 Limiting Value: Currently not available</p> <p>9.19 Reid Vapor Pressure: Currently not available</p>								
					NOTES								
1. CORRECTIVE RESPONSE ACTIONS	<p>Dilute and disperse dissolved material Stop discharge Chemical and Physical Treatment: Neutralize Do not add water to undissolved material Pump or dredge contaminated sediment</p>			6. WATER POLLUTION									
2. CHEMICAL DESIGNATIONS	<p>2.1 CG Compatibility Group: Not listed. 2.2 Formula: S<sub>x</sub>Cl<sub>y</sub> 2.3 IMO/UN Designation: 8.0/1828 2.4 DOT ID No.: 1828 2.5 CAS Registry No.: 12771-08-3 2.6 NAERG Guide No.: 137 2.7 Standard Industrial Trade Classification: 52241</p>												
3. HEALTH HAZARDS													
3.1 Personal Protective Equipment: Chemical safety goggles and/or face shield; canister-type gas mask (light concentrations) or self-contained breathing apparatus (heavy concentrations); chemically resistant shoes or boots, apron, and long-sleeve gloves.													
3.2 Symptoms Following Exposure: Vapors irritate eyes and respiratory system; pulmonary edema may result. Liquid burns and damages eyes. Unless removed at once, it burns the skin. Ingestion causes severe damage to mouth and stomach.													
3.3 Treatment of Exposure: INHALATION: remove to fresh air; use artificial respiration and oxygen if required; call a doctor. INGESTION: give water; do NOT induce vomiting; call a doctor. EYES: flush with water for at least 15 min.; obtain medical attention at once. SKIN: flush with water; remove contaminated clothing under shower.													
3.4 TLV-TWA: Not listed.													
3.5 TLV-STEL: Not listed.													
3.6 TLV-Ceiling: 1 ppm													
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 eye and throat and can cause eye and lung injury. They cannot be tolerated even at low concentrations.													
3.11 Liquor 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: 5 ppm													
3.14 OSHA PEL-TWA: 1 ppm													
3.15 OSHA PEL-STEL: Not listed.													
3.16 OSHA PEL-Ceiling: Not listed.													
3.17 EPA AEGL: Not listed													

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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	106.599	35	0.220		N		N
40	106.299	40	0.220		O		O
45	106.000	45	0.220		T		T
50	105.700	50	0.220		P		P
55	105.500	55	0.220		R		R
60	105.200	60	0.220		I		I
65	104.900	65	0.220		N		N
70	104.599	70	0.220		E		E
75	104.400	75	0.220		T		T
80	104.099	80	0.220		P		P
85	103.799	85	0.220		R		R
90	103.500	90	0.220		I		I
95	103.200	95	0.220		N		N
100	103.000	100	0.220		E		E
105	102.700	105	0.220		T		T
110	102.400	110	0.220		P		P
115	102.099	115	0.220		R		R
120	101.900	120	0.220		I		I
		125	0.220		N		N
		130	0.220		O		O
		135	0.220		T		T
		140	0.220		P		P
		145	0.220		R		R
		150	0.220		I		I
		155	0.220		N		N

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	40	0.093	40	0.00235	0	0	0.125
E	50	0.127	50	0.00313	20	20	0.126
A	60	0.170	60	0.00411	40	40	0.127
C	70	0.226	70	0.00536	60	60	0.128
T	80	0.296	80	0.00690	80	80	0.129
S	90	0.385	90	0.00882	100	100	0.130
	100	0.496	100	0.01115	120	120	0.131
	110	0.634	110	0.01399	140	140	0.132
	120	0.802	120	0.01741	160	160	0.133
	130	1.007	130	0.02149	180	180	0.133
	140	1.256	140	0.02634	200	200	0.134
	150	1.554	150	0.03206	220	220	0.135
	160	1.910	160	0.03877	240	240	0.135
	170	2.332	170	0.04658	260	260	0.136
	180	2.829	180	0.05564	280	280	0.137
	190	3.413	190	0.06608	300	300	0.137
	200	4.093	200	0.07805	320	320	0.138
	210	4.883	210	0.09171	340	340	0.138
	220	5.794	220	0.10720	360	360	0.138
	230	6.842	230	0.12480	380	380	0.139
	240	8.040	240	0.14460	400	400	0.139
	250	9.406	250	0.16670	420	420	0.139
	260	10.960	260	0.19150	440	440	0.140
	270	12.710	270	0.21910	460	460	0.140
	280	14.680	280	0.24970	480	480	0.140
					500	500	0.140