

CHROMYL CHLORIDE

CMC

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Chromium (VI) dichloride Chromium oxychloride		Liquid	Dark red	Unpleasant odor
Reacts violently with water. Irritating visible vapor cloud is produced.				
<p>Evacuate. Keep people away. Avoid contact with liquid and vapor. Call fire department. Notify local health and pollution control agencies. Protect water intakes.</p>				
Fire	Not flammable. May cause fire on contact with combustibles. Irritating gases are produced when heated. Containers may explode in fire. Extinguish with dry chemicals or carbon dioxide. DO NOT USE WATER OR FOAM ON FIRE. Cool exposed containers with water.			
Exposure	CALL FOR MEDICAL AID. 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. LIQUID POISONOUS IF SWALLOWED. Will burn skin and eyes. 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

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
 2.2 Formula: CrO₂Cl₂
 2.3 IMO/JUN Designation: 8/1758
 2.4 DOT ID No.: 1758
 2.5 CAS Registry No.: 7791-14-2
 2.6 NAERG Guide No.: 137
 2.7 Standard Industrial Trade Classification: 52329

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Self-contained breathing apparatus (full face); rubber gloves; protective clothing.
- 3.2 **Symptoms Following Exposure:** Inhalation causes severe irritation of upper respiratory system. Contact with eyes or skin causes irritation and burning. Ingestion causes burning of mouth and stomach.
- 3.3 **Treatment of Exposure:** Get medical attention following all exposures to this compound. INHALATION: remove from exposure; support respiration. EYES: flush with copious quantities of water for 15 min. SKIN: flush with water for 15 min. INGESTION: do NOT induce vomiting; give large amounts of water.
- 3.4 TLV-TWA: 0.025 mg/m³
 3.5 TLV-STEL: Not listed.
 3.6 TLV-Ceiling: Not listed.
 3.7 **Toxicity by Ingestion:** Grade 4; LD₅₀ < 50 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: 15 mg/m³ as Cr(+6)
 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, but may cause fire on contact with combustible materials.
- 4.2 **Flammable Limits in Air:** Not flammable
- 4.3 **Fire Extinguishing Agents:** Dry chemical or carbon dioxide
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Do not use water on adjacent fires unless fully protected against toxic fumes.
- 4.5 **Special Hazards of Combustion Products:** Not pertinent
- 4.6 **Behavior in Fire:** Vapors are very irritating to eyes and mucous membranes. May increase severity of fire.
- 4.7 **Auto Ignition Temperature:** Not pertinent
- 4.8 **Electrical Hazards:** Not pertinent
- 4.9 **Burning Rate:** Not pertinent
- 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 violently to form hydrogen chloride (hydrochloric acid) and chlorine gases and chromic acid.
- 5.2 **Reactivity with Common Materials:** Will cause severe corrosion of 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):** None
- 6.4 **Food Chain Concentration Potential:** None
- 6.5 **GESAMP Hazard Profile:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 99.5+%
- 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)..... | 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:** 154.9
- 9.3 **Boiling Point at 1 atm:** 241°F = 116°C = 389°K
- 9.4 **Freezing Point:** -141.7°F = -96.5°C = 176.7°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 1.96 at 20°C (liquid)
- 9.8 **Liquid Surface Tension:** 36.61 dynes/cm = 0.03661 N/m at 19°C
- 9.9 **Liquid Water Interfacial Tension:** Not pertinent
- 9.10 **Vapor (Gas) Specific Gravity:** 5.3
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** 1.2832
- 9.12 **Latent Heat of Vaporization:** 113 Btu/lb = 62.6 cal/g = 2.62 X 10⁵ J/kg
- 9.13 **Heat of Combustion:** Not pertinent
- 9.14 **Heat of Decomposition:** Not pertinent
- 9.15 **Heat of Solution:** -279 Btu/lb = -155 cal/g = -6.48 X 10⁵ 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
34	124.500	52	0.451	51	1.048	51	0.954
36	124.400	54	0.452	52	1.048	52	0.945
38	124.299	56	0.453	53	1.048	53	0.937
40	124.099	58	0.454	54	1.048	54	0.928
42	124.000	60	0.456	55	1.048	55	0.920
44	123.900	62	0.457	56	1.048	56	0.912
46	123.799	64	0.458	57	1.048	57	0.904
48	123.599	66	0.459	58	1.048	58	0.896
50	123.500	68	0.460	59	1.048	59	0.888
52	123.400	70	0.461	60	1.048	60	0.880
54	123.200	72	0.462	61	1.048	61	0.872
56	123.099	74	0.463	62	1.048	62	0.865
58	123.000	76	0.464	63	1.048	63	0.857
60	122.900	78	0.466	64	1.048	64	0.850
62	122.700	80	0.467	65	1.048	65	0.842
64	122.599	82	0.468	66	1.048	66	0.835
66	122.500	84	0.469	67	1.048	67	0.828
68	122.299	86	0.470	68	1.048	68	0.821
70	122.200			69	1.048	69	0.814
72	122.099			70	1.048	70	0.807
74	122.000			71	1.048	71	0.800
76	121.799			72	1.048	72	0.794
78	121.700			73	1.048	73	0.787
80	121.599			74	1.048	74	0.780
82	121.400			75	1.048	75	0.774
84	121.299			76	1.048	76	0.768

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	0.095	40	0.00273	30	0.058
	E	50	0.134	50	0.00378	35	0.058
	A	60	0.186	60	0.00517	40	0.058
	C	70	0.256	70	0.00698	45	0.058
	T	80	0.349	80	0.00932	50	0.058
	S	90	0.469	90	0.01231	55	0.058
		100	0.624	100	0.01608	60	0.058
		110	0.822	110	0.02082	65	0.058
		120	1.072	120	0.02669	70	0.058
		130	1.387	130	0.03393	75	0.058
		140	1.778	140	0.04278	80	0.058
		150	2.261	150	0.05351	85	0.058
		160	2.853	160	0.06643	90	0.058
		170	3.573	170	0.08188	95	0.058
		180	4.444	180	0.10020	100	0.058
		190	5.490	190	0.12190	105	0.058
		200	6.739	200	0.14740	110	0.058
		210	8.222	210	0.17720	115	0.058
		220	9.973	220	0.21170		
		230	12.030	230	0.25170		
		240	14.430	240	0.29760		