CHROMIC SULFATE

CHS

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
Chromium sulfate
Chromium III sulfate
Dichromium sulfate
Dichromium trisulfate
Sulfuric acid, chromium (3#I+) salt (3-2)

Solid | Peach, Violet, Dark green | Odorless

Sinks and mixes with water.

Keep people away. Avoid contact with solid and solution.
Wear goggles, self-contained breathing apparatus, and rubber gloves.
Notify local health and pollution control agencies.
Protect water intakes.

Fire

Fire data not available.

Exposure

CALL FOR MEDICAL AID.
DUST
Harmful if inhaled.
Move to fresh air.
If breathing has stopped, give artificial respiration.

SOLID
Irritating to 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.

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
Stop discharge
Collection Systems: Dredge

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: $Cr_2(SO_4)_3$ $Cr_2(SO_4)_3 \cdot 10H_2O$ (technical)
2.3 IMO/UN Designation: Not listed
2.4 DOT ID No.: Not listed
2.5 CAS Registry No.: 10101-53-8
2.6 NAERG Guide No.: 171
2.7 Standard Industrial Trade Classification: 52349

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Rubber gloves, safety glasses, laboratory coat, dust mask.
3.2 Symptoms Following Exposure: INHALATION: Corrosive action on mucous membranes. SKIN: May elicit an allergic reaction. Corrosive action on skin. Lesions confined to exposed parts.
3.3 Treatment of Exposure: Call a physician. EYES: Wash with plenty of water. SKIN: Wash exposed parts well with water.
3.4 TLV-TWA: 0.5 mg/m^3 as Cr.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 2; LD_{50} = 0.5 to 5 mg/kg.
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: A potential carcinogen for man.
3.10 Vapor (Gas) Irritant Characteristics: Currently not available
3.11 Liquid or Solid Characteristics: Currently not available
3.12 Odor Threshold: Odorless
3.13 IDLH Value: 25 mg/m^3 as Cr(III)
3.14 OSHA PEL-TWA: 1 mg/m^3 as Cr
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: Currently not available
4.2 Flammable Limits in Air: Currently not available
4.3 Fire Extinguishing Agents: Any media suitable for the supporting fire.
4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent
4.5 Special Hazards of Combustion Products: Decomposes to chromic acid when heated.
4.6 Behavior in Fire: Currently not available
4.7 Auto Ignition Temperature: Currently not available
4.8 Electrical Hazards: Currently not available
4.9 Burning Rate: Currently not available
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric 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: No reaction
5.2 Reactivity with Common Materials: Currently not available
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Add water slowly, stir in slight excess of soda ash. Let stand 24 hours. Neutralize with 6m HCl. Flush with large excess of water.
5.5 Polymerization: Will not occur.
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity:
Lethal concentration to stickelbacks 1.2 mg/l.
Fish critical concentration 1 mg/l.
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): Cr^{+3} lowers 5-day BOD 50% at concentrations from 62.5 to 117 mg/l.
6.4 Food Chain Concentration Potential: Currently not available
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 2
Human Oral hazard: 3
Human Contact hazard: II
Reduction of amenities: XXX

7. SHIPPING INFORMATION

7.1 Grades of Purity: Currently not available
7.2 Storage Temperature: Store in cool, dry place.
7.3 Inert Atmosphere: Currently not available
7.4 Venting: Currently not available
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: Not listed
8.2 49 CFR Class: Not listed
8.3 49 CFR Package Group: Not listed.
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification: Not listed
8.6 EPA Reportable Quantity: 1000 pounds
8.7 EPA Pollution Category: C
8.8 RCRA Waste Number: Not listed
8.9 EPA FWPCA List: Yes

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15° C and 1 atm: Solid
9.2 Molecular Weight: 392.20
9.3 Boiling Point at 1 atm: Loses water of hydration at 100°C $Cr_2(SO_4)_3 \cdot 18$ loses 12 $Cr_2(SO_4)_3 \cdot 15$ loses 10
9.4 Freezing Point: 212°F = 100°C = 373.1°K
9.5 Critical Temperature: Currently not available
9.6 Critical Pressure: Currently not available
9.7 Specific Gravity: 3.012 at room temperature for anhydrous salt Hydrated: 1.867 at 17°C for 15 H_2O; 1.7 at 22°C for 18 H_2O
9.8 Liquid Surface Tension: Currently not available
9.9 Liquid Water Interfacial Tension: Currently not available
9.10 Vapor (Gas) Specific Gravity: Currently not available
9.11 Ratio of Specific Heats of Vapor (Gas): Currently not available
9.12 Latent Heat of Vaporization: Currently not available
9.13 Heat of Combustion: Currently not available
9.14 Heat of Decomposition: Currently not available
9.15 Heat of Solution: Currently not available
9.16 Heat of Polymerization: Currently not available
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
	CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE

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
68	120.000		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE