

COBALT SULFAMATE

COS

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Cobalt amino sulfonate Cobaltous sulfamate Sulfamic acid, cobalt salt	Solid	Red	Odorless
Sinks and mixes with water.			
<p>Keep people away. Avoid contact with solid and dust. Notify local health and pollution control agencies. Protect water intakes.</p>			
Fire	Not flammable Will increase the intensity of a fire. POISONOUS GASES MAY BE PRODUCED IN FIRE. Wear goggles and self-contained breathing apparatus. Flood discharge area with water.		
Exposure	CALL FOR MEDICAL AID. DUST Irritating to eyes, nose and throat. If inhaled, will cause coughing or difficult breathing. 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. SOLID Irritating to skin and eyes. If swallowed, will cause nausea and vomiting. 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 and induce vomiting. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.		
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 local water intakes.		

1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse
Stop discharge
Collection Systems: Pump; Dredge

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: $\text{CoS}_2\text{O}_8\text{N}_2\text{H}_4$
2.3 IMO/UN Designation: Not Listed
2.4 DOT ID No.: Not listed
2.5 CAS Registry No.: 16107-41-3
2.6 NAERG Guide No.: 171
2.7 Standard Industrial Trade Classification: 51550

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Approved respirator, rubber gloves, safety goggles, protective clothing.
 3.2 **Symptoms Following Exposure:** Inhalation causes shortness of breath and coughing; permanent disability may occur. Ingestion causes pain and vomiting. Contact with eyes or skin causes irritation.
 3.3 **Treatment of Exposure:** INHALATION: Move to fresh air; if breathing has stopped, begin artificial respiration and call a doctor. INGESTION: Give large amount of water; induce vomiting; call a doctor. EYES: Flush with water for at least 15 minutes. SKIN: Flush with water.
 3.4 **TLV-TWA:** 0.02 mg/m³ (as Cobalt)
 3.5 **TLV-STEL:** Not listed.
 3.6 **TLV-Ceiling:** Not listed.
 3.7 **Toxicity by Ingestion:** Grade 3; LD₅₀ about 400 mg/kg (rabbit) (as Cobalt)
 3.8 **Toxicity by Inhalation:** Currently not available.
 3.9 **Chronic Toxicity:** Causes malignant tumors in rabbits
 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:** 20 mg/m³ as Cobalt
 3.14 **OSHA PEL-TWA:** 0.1 mg/m³ as cobalt
 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:** Not pertinent
 4.5 **Special Hazards of Combustion Products:** Toxic oxides of nitrogen may form in fire.
 4.6 **Behavior in Fire:** May increase the intensity of a 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:** No reaction
 5.2 **Reactivity with Common Materials:**
Contact with wood or paper may cause fire.
 5.3 **Stability During Transport:** Stable
 5.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent
 5.5 **Polymerization:** Not pertinent
 5.6 **Inhibitor of Polymerization:** Not pertinent

6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:**
10 ppm*/stickleback/lethal conc. limit/fresh water
15 ppm*/68 hr./stickleback avg. survival time/fresh water
20 ppm*/96 hr./stickleback/avg. survival time/fresh water
*as cobalt
 6.2 **Waterfowl Toxicity:** Currently not available
 6.3 **Biological Oxygen Demand (BOD):** None
 6.4 **Food Chain Concentration Potential:**
Bioconcentration of 200-1000 fold only under constant exposure. Not significant under spill conditions.
 6.5 **GESAMP Hazard Profile:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Technical trihydrate. May be shipped as anhydrous solid.
 7.2 **Storage Temperature:** Ambient
 7.3 **Inert Atmosphere:** No requirement
 7.4 **Venting:** Open
 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 Pertinent
 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:** 253.13
 9.3 **Boiling Point at 1 atm:** Currently not available
 9.4 **Freezing Point:** Currently not available
 9.5 **Critical Temperature:** Currently not available
 9.6 **Critical Pressure:** Currently not available
 9.7 **Specific Gravity:** Currently not available
 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
	C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E

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
	C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E