

# VANADYL SULFATE

VSF

CAUTIONARY RESPONSE INFORMATION			
Common Synonyms Vanadium oxyulfate Vanadyl sulfate dihydrate	Solid	Pale blue	Odorless
Sinks and mixes with water.  Keep people away. Avoid contact with solid and dust. Notify local health and pollution control agencies. Protect water intakes.			
Fire	Not flammable.		
Exposure	CALL FOR MEDICAL AID. <b>DUST</b> 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.  <b>SOLID</b> Irritating to skin and eyes. If swallowed will cause nausea or coughing. 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 have victim 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 nearby water intakes.		

1. CORRECTIVE RESPONSE ACTIONS	2. CHEMICAL DESIGNATIONS
Dilute and disperse Stop discharge	2.1 CG Compatibility Group: Not listed. 2.2 Formula: VOSO <sub>4</sub> ·2H <sub>2</sub> O 2.3 IMO/UN Designation: Not listed 2.4 DOT ID No.: 2931 2.5 CAS Registry No.: 1344-64-5 2.6 NAERG Guide No.: 151 2.7 Standard Industrial Trade Classification: 52349
3. HEALTH HAZARDS	
3.1 Personal Protective Equipment: Dust mask; goggles or face shield; protective gloves	
3.2 Symptoms Following Exposure: Inhalation of dust causes irritation of nose and throat. Ingestion causes irritation of mouth and stomach. Contact with eyes or skin causes irritation; eczema may develop. (Result of prolonged exposure are described in section 5.7).	
3.3 Treatment of Exposure: INHALATION: move to fresh air; if exposure to dust has been severe, get medical attention. INGESTION: give large amount of water; induce vomiting; get medical attention. EYES: flush with water for at least 15 min. SKIN: flush with water.	
3.4 TLV-TWA: Not listed. 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed.	
3.7 Toxicity by Ingestion: Grade 3; LD <sub>50</sub> = 50-500 mg/kg	
3.8 Toxicity by Inhalation: Currently not available.	
3.9 Chronic Toxicity: Repeated exposures may cause discoloration of tongue, loss of appetite, anemia, kidney disorders, and blindness.	
3.10 Vapor (Gas) Irritant Characteristics: Currently not available	
3.11 Liquid or Solid Characteristics: Currently not available	
3.12 Odor Threshold: Currently not available	
3.13IDLH 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	7. SHIPPING INFORMATION
4.1 Flash Point: Not flammable	7.1 Grades of Purity: Commercial; Pure
4.2 Flammable Limits in Air: Not flammable	7.2 Storage Temperature: Ambient
4.3 Fire Extinguishing Agents: Not pertinent	7.3 Inert Atmosphere: No requirement
4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent	7.4 Venting: Open
4.5 Special Hazards of Combustion Products: Not pertinent	7.5 IMO Pollution Category: Currently not available
4.6 Behavior in Fire: Currently not available	7.6 Ship Type: Currently not available
4.7 Auto Ignition Temperature: Not pertinent	7.7 Barge Hull Type: Currently not available
8. HAZARD CLASSIFICATIONS	
8.1 49 CFR Category: Poison	
8.2 49 CFR Class: 6.1	
8.3 49 CFR Package Group: II	
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	
5. CHEMICAL REACTIVITY	
5.1 Reactivity with Water: No reaction	9.1 Physical State at 15° C and 1 atm: Solid
5.2 Reactivity with Common Materials: Currently not available	9.2 Molecular Weight: 199.1
5.3 Stability During Transport: Stable	9.3 Boiling Point at 1 atm: Not pertinent (decomposes)
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent	9.4 Freezing Point: Not pertinent
5.5 Polymerization: Not pertinent	9.5 Critical Temperature: Not pertinent
5.6 Inhibitor of Polymerization: Not pertinent	9.6 Critical Pressure: Not pertinent
6. WATER POLLUTION	9.7 Specific Gravity: (approx.) 2.5 at 20°C (solid)
6.1 Aquatic Toxicity: 30 ppm/96 hr/fathead minnow/TL <sub>50</sub> /hard water	9.8 Liquid Surface Tension: Not pertinent
6.2 Waterfowl Toxicity: Currently not available	9.9 Liquid Water Interfacial Tension: Not pertinent
6.3 Biological Oxygen Demand (BOD): Currently not available	9.10 Vapor (Gas) Specific Gravity: Not pertinent
6.4 Food Chain Concentration Potential: Currently not available	9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
6.5 GESAMP Hazard Profile: Not listed	9.12 Latent Heat of Vaporization: Not pertinent

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
NOT PERTINENT			NOT PERTINENT		NOT PERTINENT		NOT PERTINENT

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	30.000		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT