

MATERIAL SAFETY DATA SHEET



Complies with U.S. OSHA
E.C. Guideline 91/155/EEC:

Revision: 1
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EMERGENCY TELEPHONE NUMBERS:
NATIONAL RESPONSE CENTER: 1-800-424-8802
CHEMTREC U.S. and CANADA: 1-800-424-9300
CHEMTREC International: 1-202-483-7616 (Collect)

Users of this product are requested to study this data sheet to learn the product's characteristics so that the product can be used safely. If the material is resold, the purchaser should be furnished a copy of this data sheet and the information should be made available to all users.

SECTION 1

Chemical Product and Company Identification

Product Trade Name	Vanadyl Sulfate Hydrate
Company Identification	Evrax Stratcor, Inc. Tel.: (501) 262-1270 4285 Malvern Road Fax: (501) 262-2793 Hot Springs, Arkansas 71901; U.S.A.
Inquiry Department	Evrax Stratcor, Inc.; Pittsburgh, PA 15205; U.S.A. Tel.: (412) 787-4500; www.evraxstratcor.com

SECTION 2

Composition and Information on Ingredients

Chemical Characterization:	
Chemical Description	Vanadyl Sulfate Hydrate Powder.
UN Number	UN 2931
DOT Guide	154
CAS No.	27774-13-6
EINECS No.	248-652-7

SECTION 3

Hazards Identification

Potential Hazards for Humans and Animals:	
Eye Contact	Redness, swelling, pain, and flood of tears. Possible chemical burns and corneal damage.
Skin Contact	Irritation with burning, reddening, and itching. Dermatitis.
Inhalation	Breathing difficulty, irritation of mucous membranes, coughing, acute reaction to vanadium salts..
Ingestion	Chemical and irritation of the intestinal tract. Abdominal discomfort, vomiting, diarrhea, and spasms.

SECTION 4

First-Aid Measures

General Information:	
Inhalation	Move Immediately to fresh air. Administer oxygen if breathing is difficult. Administer artificial respiration if breathing has stopped. Obtain medical attention immediately.
Skin	Immediately flush skin with plenty of water, while removing contaminated clothing. Obtain medical attention. Launder clothing before re-use. Destroy contaminated shoes.
Eyes	Immediately flush eyes with plenty of water for at least 20 minutes. Check the victim for contact lenses and remove if present. Obtain immediate medical attention.
Ingestion	Do not induce vomiting. Have victim rinse mouth with water and then give 1 to 2 glasses water to drink. Obtain medical attention immediately. Never give anything by mouth to an unconscious or convulsing person.

SECTION 5

Fire-Fighting Measures

Suitable Extinguishing Media	Use media suitable to the surrounding fire, such as water fog, dry chemical, foam, and carbon dioxide.
Extinguishing Media Not to Be Used	None.
Special Exposure Hazards	This product may release flammable hydrogen gas on contact with many common metals, which may significantly contribute to the risk of fire and explosion. Fire may result in toxic and irritating fumes.
Special Protective Equipment for Fire Fighters	Wear proper chemically resistant protective equipment and self-contained breathing apparatus (SCBA) operated in positive-pressure mode.
Special Fire-Fighting Procedures	Move container from fire area if it can be done without risk. Use water spray to keep fire exposed containers cool. Keep run-off water out of sewers and water sources.

SECTION 6

Accidental-Release Measures

Personal Precautions	Wear appropriate chemically-protective equipment, such as gloves, a faceshield, goggles, and suitable body protection (see Section 8). Level B gear recommended for large releases.
Environmental Precautions	Prevent spilled product from entering drains, sewers, waterways, and soil.
Cleaning Methods	Ventilate area of release. Do not touch spilled material. Shovel spill into polyethylene or plastic containers. Steel or aluminum containers may react with the product and dissolve. Wash thoroughly after dealing with a spillage.

SECTION 7

Handling and Storage

Safe Handling	Always wear chemically-protective equipment during handling. Use in a well-ventilated area. Do not inhale vapors.. Do not allow contact with eyes, skin and clothing. Process and handling equipment must be resistant to mildly acidic materials. Keep away from metals, bases and other incompatible materials. Wash thoroughly after handling material.
Storage	Store in closed, suitable containers located in a cool, dry, well-ventilated area. Store away from incompatibles.

SECTION 8

Exposure Controls and Personal Protection

Occupational Exposure Limit	Not listed in OSHA 29 CFR 1910.1000, Table Z-1 (Air Contaminants): No published data for exposure limits for vanadyl sulfate 0.05 mg vanadium/m ³ 15-minute ceiling for vanadium compounds (NIOSH). 0.05 mg/m ³ for V ₂ O ₅ (NIOSH TLV TWA)
Personal Safety Equipment: Respiratory Protection	Use respirators approved by NIOSH/MSHA; use SAR for oxygen-deficient atmosphere.
Hand Protection	Use chemically-protective gloves.
Eye Protection	Use goggles, a full face shield, or mask.
Skin Protection	Wear chemically-protective clothing.
Personal Hygiene	Do not inhale vapors. Do not allow contact with eyes, skin and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Thoroughly wash at the end of each work shift. Immediately remove any clothing that becomes contaminated and launder before re-use. Contaminated shoes should be destroyed.

SECTION 9

Physical and Chemical Properties

This MSDS reflects available research data and is not a product- or quality-specification document.

Appearance:	
Physical State	Crystalline.
Form	Powder.
Color	Sky blue.
Odor	None.
Change in Physical State:	
Melting Point	Decomposes.
Boiling Point	Not applicable.
Flash Point	None.
Flammability	Not applicable.
Ignition Temperature	Not applicable.
Auto Flammability	Not applicable.
Oxidizing Properties	May act as a catalyst in certain chemical environments.
Explosive Properties	Not applicable.
Solubility in Water (20°C)	About 40 %.
pH Value	Not applicable.

SECTION 10

Stability and Reactivity

Stability	Stable under the recommended storage and handling conditions prescribed. This product may release flammable hydrogen gas on contact with many common metals. Hazardous polymerization will not occur.
Conditions to Avoid	Contact with metals. Extreme heat.
Incompatible Materials	Strong bases, metals, water reactive materials, oxidizing agents.
Hazardous Decomposition	If heated or involved in a fire, toxic and irritating fumes of sulfur oxides and vanadium oxides may be formed.

SECTION 11

Toxicological Information

Acute Toxicity	Harmful or fatal if inhaled. Inhalation of vapors may cause severe irritation to the nose, throat and upper respiratory tract. Symptoms may include burning pain, coughing, wheezing and shortness of breath. Could cause bronchitis, lung injury and pulmonary edema. Effects of pulmonary edema may be delayed.
Irritation	Eye and skin irritant. Hazardous and may cause severe burns.
Chronic Toxicity	Prolonged or repeated skin contact may cause dermatitis (drying and cracking) or allergy-like eczematous skin lesions. Chronic inhalation could cause symptoms similar to those listed for acute inhalation, including bronchitis and possible lung injury. These effects may be reversible.
Carcinogen Status:	No data that indicates carcinogenicity.
Mutagen Status	No data available.
Teratogen Status	No data indicating any hazards.

SECTION 12

Ecological Information

Persistence and Degradability	The components of this product will react with other substances or be degraded over time into other inorganic compounds.
Bioaccumulation	No data available.
Aquatic Toxicity and Other Data Relating to Ecotoxicity	Components of this product can be harmful or fatal to aquatic organisms. The ecotoxic effects of the product itself have not been fully investigated. This material will lower the pH of any environment.

SECTION 13 Disposal Considerations

Product Disposal	This product must be disposed of as a hazardous waste based on its harmful and irritating properties. Disposal should be made in compliance with Federal, state, and local environmental regulations.
Packaging Disposal	Empty containers must be disposed of as a hazardous waste based on its harmful and irritating properties. Disposal should be made in compliance with Federal, state, and local regulations.

SECTION 14 Transport Information

U.N. packaging requirements shall be met for air and non-U.S. shipments.	
Proper Shipping Description	Vanadyl sulfate, 6.1, UN 2931, 6.1, II.
Land Transport	Regulated by U.S. Department of Transportation (DOT) CFR 173.212 Packing Instruction for Non-Bulk and CFR 173.242 Packing Instruction for Bulk Provisions: 1B8, 1P2, 1P4 DOT Guide No. 151.
Sea Transport	Regulated by International Maritime Dangerous Goods (IMDG) P002 Packing Instruction, IBC08 Packing Instruction for Dangerous Containers, Provision B2, B4; T3-UN Tank Instruction, Provision TP33; EmS: F-A, S-A.
Air Transport	Regulated by International Air Transport Association (IATA) Y613 Packing Instruction for "LTD QTY" passenger aircraft, Limit 1 kg.; 613 Packing Instruction for Passenger Aircraft, Limit 25 kg; 615 Packing Instruction for Cargo Only Aircraft, Limit 100 kg. ERG Code: 6L.
Labels and Placards	Toxic 6

SECTION 15 Regulatory Information

Classification According to U.N. Guidelines	Not listed.
E.C. Danger Symbol	
R-Phrases	R20 / 22 (Harmful by inhalation and if swallowed.) R36 / 37 / 38 (Irritating to eyes, respiratory system and skin.)
S-Phrases	S36 / 37 / 39 (Wear suitable protective clothing, gloves and eye/face protection.) S24 / 25 (Avoid contact with skin and eyes.) S26 (In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.)
U.S. EPA TSCA Inventory	Listed in EPA TSCA inventory.
CERCLA RQ / EHS Components	No RQ has been established.
U.S. EPA SARA III, Section 302	Not listed.
U.S. EPA SARA III, Section 304	Vanadyl sulfate has a RQ of 454 kg (1,000 lbs.).
U.S. EPA SARA, Sections 311 and 312	To be determined.
U.S. EPA SARA III, Section 313	Not required.
U.S. EPA CAA 112(r)	Not listed.
Non-U.S. Requirements	Refer to specific national guidelines.

SECTION 16 Other Information

Data Sheet Prepared by:  10-1-11
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Evraz Stratcor, Inc. believes that the data on this sheet are correct as of the effective date and that the opinions given reflect those of qualified experts. Since Evraz Stratcor cannot control the product or its use, it is the user's responsibility to use the product safely. The data on this sheet apply only to products sold by corporate subsidiaries of Evraz Stratcor and may not apply to products sold by others.

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