

Material Safety Data Sheet

Vanadyl(IV)-sulfate hydrate, 17-23% Vanadium

ACC# 17375

Section 1 - Chemical Product and Company Identification

MSDS Name: Vanadyl(IV)-sulfate hydrate, 17-23% Vanadium

Catalog Numbers: AC214840000, AC214841000

Synonyms: Oxysulfato vanadium (IV) hydrate; Vanadium oxysulfate; Oxo[sulfato(2-)-O]-Vanadium; Vanadyl (IV) sulfate; Oxysulfato vanadium (IV); Vanadium (IV) sulfate oxide; Vanadyl(IV)-sulfate hydrate

Company Identification:

Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01

For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
12439-96-2	Vanadyl(IV)-sulfate hydrate	100	unlisted

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: blue crystals.

Warning! Causes respiratory tract irritation. Causes eye and skin irritation. May cause digestive tract irritation.

Target Organs: No data found.

Potential Health Effects

Eye: Causes eye irritation. May cause chemical conjunctivitis.

Skin: Causes skin irritation.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Vanadium compounds can cause polycythemia (an increase in the total red cell mass of the blood), followed by red blood cell destruction, anemia, loss of appetite, pallor, and emaciation. May cause greenish-black tongue discoloration due to deposition of vanadium salts.

Inhalation: Causes respiratory tract irritation. Can produce delayed pulmonary edema.

Chronic: Effects may be delayed. May produce scattered allergy-like eczematous skin lesions symptomatic of vanadium toxicity.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion.

Extinguishing Media: Use agent most appropriate to extinguish fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower:Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 1; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation. Wash clothing before reuse.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Vanadyl(IV)-sulfate hydrate	none listed	none listed	none listed
Vanadyl sulfate	none listed	none listed	none listed

OSHA Vacated PELs: Vanadyl(IV)-sulfate hydrate: No OSHA Vacated PELs are listed for this chemical. Vanadyl sulfate: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Crystals

Appearance: blue

Odor: None reported.

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: Not available.

Decomposition Temperature: Not available.

Solubility: Soluble.

Specific Gravity/Density: Not available.

Molecular Formula: O5SV.xH2O

Molecular Weight: 163.00

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, dust generation, excess heat.

Incompatibilities with Other Materials: Chlorine, lithium, strong acids, strong oxidizing agents.

Hazardous Decomposition Products: Oxides of sulfur, irritating and toxic fumes and gases.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 12439-96-2: YW1840000

CAS# 27774-13-6: YW1925000

LD50/LC50:

CAS# 12439-96-2:

Oral, mouse: LD50 = 467 mg/kg;

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Oral, rat: LD50 = 448 mg/kg;

Oral, rat: LD50 = 448 mg/kg;

CAS# 27774-13-6:

Skin, rabbit: LD50 = 4450 mg/kg;

Carcinogenicity:

CAS# 12439-96-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 27774-13-6: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.
Teratogenicity: No information available.
Reproductive Effects: No information available.
Mutagenicity: No information available.
Neurotoxicity: No information available.
Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	VANADYL SULFATE	VANADYL SULPHATE
Hazard Class:	6.1	6.1
UN Number:	UN2931	UN2931
Packing Group:	II	II

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 12439-96-2 is not listed on the TSCA inventory. It is for research and development use only.

CAS# 27774-13-6 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 27774-13-6: 1000 lb final RQ; 454 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 27774-13-6: immediate.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

CAS# 27774-13-6 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 12439-96-2 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

CAS# 27774-13-6 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XN

Risk Phrases:

R 22 Harmful if swallowed.

R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 12439-96-2: No information available.

CAS# 27774-13-6: No information available.

Canada - DSL/NDSL

CAS# 27774-13-6 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 27774-13-6 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 9/02/1997

Revision #6 Date: 12/14/2004

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.