

1. Identification

Product identifier**Product Identity**

Vanadyl Oxalate

Other means of identification

Vanadyl Oxalate

Relevant identified uses of the substance or mixture and uses advised against

Vanadyl Oxalate Solution is used in catalysts that remove sulfur and nitrogen.

Application Method

See Technical Data Sheet.

Details of the supplier of the safety data sheet**Company Name**US Vanadium, LLC
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Hot Springs, Arkansas 71901**Emergency****CHEMTREC (USA)**

(800) 424-9300

24 hour Emergency Telephone No.

US Vanadium, LLC: +1-501-262-1270

Customer Service: US Vanadium, LLCNATIONAL RESPONSE CENTER: +1-800-424-8802
CHEMTREC U.S. and CANADA: +1-800-424-9300
CHEMTREC International: +1-202-483-7616 (Collect)

2. Hazard(s) identification

Classification of the substance or mixture

Acute Tox. 4;H302

Harmful if swallowed.

Acute Tox. 4;H312

Harmful in contact with skin.

Eye Dam. 1;H318

Causes serious eye damage.

Label elements**Danger**

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H318 Causes serious eye damage.

[Prevention]:

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves, eye protection, face protection.

[Response]:

P301+312 IF SWALLOWED: Call a POISON CENTER, doctor or physician if you feel unwell.

P302+352 IF ON SKIN: Wash with plenty of soap and water.

P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

P310 Immediately call a POISON CENTER, doctor or physician.

P312 Call a POISON CENTER, doctor or physician if you feel unwell.

P330 IF SWALLOWED: Rinse mouth.

[Storage]:

No GHS storage statements

[Disposal]:

P501 Dispose of contents or container in accordance with local and national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the Hazardous Products Regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Ethanedioic acid, vanadium salt CAS Number: 0014974-48-2 Synonyms: Ethanedioic acid, vanadium salt	80 - 100	Acute Tox. 4;H302 Acute Tox. 4;H312 Eye Dam. 1;H318 Aquatic Chronic 3;H412	[1]

[1] Substance with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

Section 4. First aid measures

Description of first aid measures

General

In all cases of doubt, or when symptoms persist, seek medical attention.
Never give anything by mouth to an unconscious person.

Inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious, place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eyes

Flush with water 15 minutes to remove particles. See an ophthalmologist.

Skin

Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.

Ingestion

Give large quantities of water. Call a physician.

Most important symptoms and effects, both acute and delayed

Overview

Ingestion: mild acid burns with skin contact.

Eye Contact: Burning, redness, pain, flood of tears..

Skin Contact: Irritation with burning, reddening, and itching.

Ingestion: Harmful if swallowed. Abdominal discomfort, vomiting, and spasm. Treat symptomatically. See section 2 for further details.

Eyes

Causes serious eye damage.

Skin

Harmful in contact with skin.

Ingestion

Harmful if swallowed.

Section 5. Fire-fighting measures

Extinguishing media

Not flammable. Use media suitable for surrounding fire.

Special hazards arising from the substance or mixture

Hazardous decomposition: Vanadium oxides, carbon dioxide.

Advice for fire-fighters

Use gloves, eye protection, and self-contained breathing apparatus to prevent contact.

Avoid actions which generate fumes.

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Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8).

Environmental precautions

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

Methods and material for containment and cleaning up

Wear acid-resistant clothing and eye protection.

Prevent spill entering sewage systems or surface water.

Use absorbent compound to clean up spills.

Contain, dilute cautiously with water, and neutralize with soda ash or lime.

Section 7. Handling and storage

Precautions for safe handling

Use acid-resistant container. Handle with care. Keep in cool, dry place.

See section 2 for further details. - [Prevention]:

Conditions for safe storage, including any incompatibilities

Incompatible materials: Generates carbon dioxide (CO₂) when exposed to alkaline products.

See section 2 for further details. - [Storage]:

Specific end use(s)

No data available.

Section 8. Exposure controls / personal protection

Control parameters
Exposure

CAS No.	Ingredient	Source	Value
0014974-48-2	Ethanedioic acid, vanadium salt	ACGIH	No Established Limit
		Alberta	No Established Limit

	British Columbia	No Established Limit
	Manitoba	No Established Limit
	New Brunswick	No Established Limit
	Newfoundland and Labrador	No Established Limit
	Nova Scotia	No Established Limit
	Northwest Territories	No Established Limit
	Nunavut	No Established Limit
	Ontario	No Established Limit
	Prince Edward Island	No Established Limit
	Quebec	No Established Limit
	Saskatchewan	No Established Limit
	Yukon	No Established Limit

Exposure controls
Respiratory

Use respirators approved by NIOSH/MSHA.

Eyes

Use approved eye protection.

Skin

Wear acid-proof clothing. Use appropriate rubber gloves.

Engineering Controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapour below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details.

Section 9. Physical and chemical properties

Appearance

Liquid

Odor

Unknown

Odor threshold

Not determined

pH

Less than 1

Melting point / freezing point

Not Available

Initial boiling point and boiling range

Not Available

Flash Point

Not Available

Evaporation rate (Ether = 1)

Not Available

Flammability (solid, gas)

Not Applicable

Upper/lower flammability or explosive limits

Lower Explosive Limit: Not Available

Upper Explosive Limit: Not Available

Vapor pressure (Pa)

Not Available

Vapor Density

Not Available

Relative Density

Not Available

Solubility in Water

22g per 100g (at 20C)

Partition coefficient n-octanol/water (Log Kow)

Not Available

Auto-ignition temperature	Not Available
Decomposition temperature	Not Available
Viscosity (cSt)	Not Available
Oxidizing Properties	May act as a catalyst in certain chemical environments.
Other information	
No other relevant information.	

Section 10. Stability and reactivity

Reactivity

Hazardous Polymerization will not occur.

Chemical stability

Stable under normal circumstances.

Possibility of hazardous reactions

No data available.

Conditions to avoid

Excessive heat and open flame.

Incompatible materials

Generates carbon dioxide (CO₂) when exposed to alkaline products.

Hazardous decomposition products

Vanadium oxides, carbon dioxide.

Section 11. Toxicological information

Acute toxicity

Note: When no route specific LD₅₀ data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Ingredient	Oral LD ₅₀ , mg/kg	Skin LD ₅₀ , mg/kg	Inhalation vapour LC ₅₀ , mg/L/4hr	Inhalation Dust/Mist LC ₅₀ , mg/L/4hr	Inhalation Gas LC ₅₀ , ppm
Ethanedioic acid, vanadium salt - (14974-48-2)	No data available	No data available	No data available	No data available	No data available

Carcinogen Data

CAS No.	Ingredient	Source	Value
0014974-48-2	Ethanedioic acid, vanadium salt	IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
		ACGIH	No Established Limit

Classification	Category	Hazard Description
Acute toxicity (oral)	4	Harmful if swallowed.
Acute toxicity (dermal)	4	Harmful in contact with skin.
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	1	Causes serious eye damage.
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable

Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

Possible routes of entry: No data available.

Symptoms and effects, both acute and delayed:

Ingestion: mild acid burns with skin contact.

Eye Contact: Burning, redness, pain, flood of tears..

Skin Contact: Irritation with burning, reddening, and itching.

Ingestion: Harmful if swallowed. Abdominal discomfort, vomiting, and spasm. Treat symptomatically.

Eyes Causes serious eye damage.

Skin Harmful in contact with skin.

Ingestion Harmful if swallowed.

Section 12. Ecological information

Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Ethanedioic acid, vanadium salt - (14974-48-2)	Not Available	Not Available	Not Available

Persistence and degradability

There is no data available on the preparation itself.

Bioaccumulative potential

Not Available

Mobility in soil

No data available.

Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

Other adverse effects

No data available.

Section 13. Disposal considerations

Waste treatment methods

Observe all federal, provincial and local regulations when disposing of this substance.

Section 14. Transport information

Classification Method: Classified as per Part 2, Sections 2.1 – 2.8 of the Transportation of Dangerous Goods Regulations.

	TDG (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
UN number	UN3287	UN3287	UN3287
UN proper shipping name	UN3287, Toxic liquid, inorganic, n.o.s., (Vanadyl Oxalate), 6.1, III	Toxic liquid, inorganic, n.o.s., (Vanadyl Oxalate)	Toxic liquid, inorganic, n.o.s., (Vanadyl Oxalate)
Transport hazard class(es)	TDG Hazard Class: 6.1	IMDG: 6.1	Air Class: 6.1
Packing group	III	III	III
Environmental hazards			
IMDG	Marine Pollutant: No;		
Special precautions for user			
	Not Applicable		

Section 15. Regulatory information

This product has been classified in accordance with the hazard criteria Hazardous Products Regulations (SOR/2015-17) and the SDS contains all of the information required by those regulations.

Canadian Domestic Substance List (DSL):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Canadian Non-Domestic Substance List (NDSL):

Ethanedioic acid, vanadium salt

Section 16. Other information

SDS Revision Date **December 16, 2024**

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H318 Causes serious eye damage.

H412 Harmful to aquatic life with long lasting effects.

US Vanadium, LLC 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 US Vanadium, LLC 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 US Vanadium, LLC and may not apply to products sold by others.

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