

## 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  
4285 Malvern Road  
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, LLC**NATIONAL 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.

**ERG Guide No.** 151

## 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 (CO<sub>2</sub>) 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

<b>Appearance</b>	Liquid
<b>Odor</b>	Unknown
<b>Odor threshold</b>	Not determined
<b>pH</b>	Less than 1
<b>Melting point / freezing point</b>	Not Available
<b>Initial boiling point and boiling range</b>	Not Available
<b>Flash Point</b>	Not Available
<b>Evaporation rate (Ether = 1)</b>	Not Available
<b>Flammability (solid, gas)</b>	Not Applicable
<b>Upper/lower flammability or explosive limits</b>	<b>Lower Explosive Limit:</b> Not Available <b>Upper Explosive Limit:</b> Not Available
<b>Vapor pressure (Pa)</b>	Not Available
<b>Vapor Density</b>	Not Available
<b>Relative Density</b>	Not Available
<b>Solubility in Water</b>	22g per 100g (at 20C)
<b>Partition coefficient n-octanol/water (Log Kow)</b>	Not Available

<b>Auto-ignition temperature</b>	Not Available
<b>Decomposition temperature</b>	Not Available
<b>Viscosity (cSt)</b>	Not Available
<b>Oxidizing Properties</b>	May act as a catalyst in certain chemical environments.
<b>Other information</b>	
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 (CO<sub>2</sub>) 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 LD50, mg/kg	Skin LD50, mg/kg	Inhalation vapour LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, 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.

	<b>TDG (Domestic Surface Transportation)</b>	<b>IMO / IMDG (Ocean Transportation)</b>	<b>ICAO/IATA</b>
<b>UN number</b>	UN3287	UN3287	UN3287
<b>UN proper shipping name</b>	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)
<b>Transport hazard class(es)</b>	<b>TDG Hazard Class: 6.1</b>	<b>IMDG: 6.1</b>	<b>Air Class: 6.1</b>
<b>Packing group</b>	III	III	III
<b>Environmental hazards</b>			
<b>IMDG</b>	Marine Pollutant: No;		
<b>Special precautions for user</b>	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** 07/31/2019

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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