

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	Vanadium (V) oxide
CAS number	1314-62-1
Synonyms	Vanadium pentoxide; CI 77938

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

Identified uses	Laboratory chemicals.
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1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification


2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute Oral Toxicity	Category 3
Acute Inhalation Toxicity - Dusts and Mists	Category 2
Germ Cell Mutagenicity	Category 2
Carcinogenicity	Category 1B
Reproductive Toxicity	Category 2
Effects on or via Lactation	
Specific Target Organ Toxicity (single exposure)	Category 3

Target Organ(s) - Respiratory system
Specific Target Organ Toxicity (repeated exposure) Category 1
Target Organ(s) - Respiratory system

2.2 GHS Label elements, including precautionary statements

Pictogram	
Signal Word	Danger
Hazard statements	Toxic if swallowed. Fatal if inhaled. May cause respiratory irritation. Suspected of causing genetic defects. May cause cancer. Suspected of damaging fertility; suspected of damaging the unborn child. May cause harm to breast-fed children. Causes damage to organs through prolonged or repeated exposure.
Precautionary statements	<p>Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact during pregnancy/while nursing. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear respiratory protection.</p> <p>Response: If exposed or concerned, get medical attention/advice.</p> <p>IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.</p> <p>IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.</p> <p>Storage: Store locked up. Store in a well-ventilated place. Keep container tightly closed.</p> <p>Disposal: Dispose of contents/container to an approved waste disposal plant:</p>

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Toxic to aquatic life with long lasting effects.
WARNING: Cancer.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Vanadium (V) oxide	Vanadium pentoxide; CI 77938	1314-62-1	> 95%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled	Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.
In case of skin contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
In case of eye contact	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
If swallowed	Do NOT induce vomiting. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

None reasonably foreseeable.

4.3 Indication of any immediate medical attention and special treatment needed

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
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Unsuitable extinguishing media No information available.

5.2 Specific hazards arising from the substance or mixture

Non-combustible. Thermal decomposition can lead to release of irritating gases and vapors.

5.3 Special protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

5.4 Further information

Flash Point No information available.

Autoignition Temperature No information available.

Explosion limits

Upper No data available.

Lower No data available.

Sensitivity to Mechanical Impact No information available.

Sensitivity to Static Discharge No information available.

NFPA

Health	Flammability	Instability	Physical hazards
4	0	0	N/A

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Avoid dust formation. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

6.2 Environmental precautions

Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

6.4 Reference to other sections

See Section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling

Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Avoid dust formation. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed, seek immediate medical assistance.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep in a dry, cool, and well-ventilated place. Keep container tightly closed. Keep locked up.

Incompatibilities

Strong acids, reducing agents.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. ACGIH Threshold Limit Values

Component	Type	Value
Vanadium (V) oxide	TWA	0.05 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value
Vanadium (V) oxide	IDLH	35 mg/m ³
	Ceiling	0.05 mg/m ³

Biological occupational exposure limits

No information available.

8.2 Exposure controls

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection

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 protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Body Protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended Filter type: Particulates filter conforming to EN 143.

Control of environmental exposure

No information available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Powder solid
Appearance	Amber
Odor	Odorless
Odor Threshold	No information available
pH	4 (5%)
Melting Point/Range	690 °C / 1274 °F
Boiling Point/Range	1750 °C / 3182 °F
Evaporation Rate	Not applicable
Flammability (solid)	No information available
Flammability or explosive limit	No data available
Upper	
Lower	
Vapor Pressure	0.0443 hPa @ 700 °C
Vapor Density	Not applicable
Density	No information available
Solubility	8 g/L
Partition coefficient; n-octanol/water	No data available
Autoignition Temp	No information available
Decomposition Temp	1750 °C
Viscosity	Not applicable
Molecular Formula	O5V2
Molecular Weight	181.88 g/mol

VOC Content(%) No information available
Oxidizing properties No information available

9.2 Other safety information

No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

No known reactive hazards based on information available.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

None under normal processing.

10.4 Conditions to avoid

Incompatible products, combustible material.

10.5 Incompatible materials

Strong acids, reducing agents.

10.6 Hazardous decomposition products

Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Vanadium (V) oxide	474 mg/kg (Rat, male) 467 mg/kg (Rat, female) 314 mg/kg (Rat, male) 221 mg/kg (Rat, female)	> 2500 mg/kg (Rat)	4.4 mg/L (Rat) 4 h 2.21 mg/L (Rat) 4 h

Skin corrosion/irritation

No information available.

Serious eye damage/eye irritation

No information available.

Respiratory or skin sensitization

No information available.

Germ cell mutagenicity

No information available.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Vanadium (V) oxide	1314-62-1	Group 2B	Not listed	A3	X	A3

Specific target organ toxicity - single exposure

Respiratory system.

Specific target organ toxicity - repeated exposure

Respiratory system.

Reproductive toxicity

No information available.

Chronic effects

No information available.

11.2 Additional Information

The toxicological properties have not been fully investigated.

SECTION 12: Ecological information

12.1 Toxicity

Toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

12.2 Persistence and degradability

Soluble in water. Persistence is unlikely based on information available.

12.3 Bio accumulative potential

No information available.

12.4 Mobility in soil

Likely mobile in the environment due to its water solubility.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

DOT (US)

UN-no	UN2862
Proper Shipping Name	VANADIUM PENTOXIDE
Hazard Class	6.1
Packing Group	III

IMDG

UN-no	UN2862
Proper Shipping Name	VANADIUM PENTOXIDE
Hazard Class	6.1
Packing Group	III

IATA

UN-no	UN2862
Proper Shipping Name	VANADIUM PENTOXIDE
Hazard Class	6.1
Packing Group	III

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not applicable.

CERCLA Hazardous Substance List (40 CFR 302.4)

Listed, Vanadium pentoxide (CAS #1314-62-1), RQ: 1000 lb.

SARA 304 Emergency release notification

Listed, Vanadium pentoxide (CAS #1314-62-1), RQ: 1000 lb.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Listed, Vanadium pentoxide (CAS #1314-62-1), RQ: 100/1000 lb.

SARA 311/312 Hazardous

See Section 2 for more information.

SARA 313 (TRI reporting)

Regulated, Vanadium pentoxide (CAS #1314-62-1).

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

Not regulated.

Clean Water Act (CWA - Hazardous Substances)

Listed, Vanadium pentoxide (CAS #1314-62-1), RQ: 1000 lb.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not listed.

US state regulations

US. Massachusetts RTK - Substance List

Listed, Vanadium pentoxide (CAS #1314-62-1).

US. New Jersey Worker and Community Right-to-Know Act

Listed, Vanadium pentoxide (CAS #1314-62-1).

US. Pennsylvania Worker and Community Right-to-Know Law

Listed, Vanadium pentoxide (CAS #1314-62-1).

California Proposition 65

Listed, Vanadium pentoxide (CAS #1314-62-1), Carcinogen.

SECTION 16: Other information

Issue date: 09/20/2024

SECTION 17: Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.