

## SAFETY DATA SHEET

Revision Date 10-Mar-2022

Revision Number 4

### 1. Identification

**Product Name** Vanadium(III) oxide

**Cat No. :** 43377

**CAS No** 1314-34-7  
**Synonyms** Divanadium trioxide; Vanadic oxide.; Vanadium sesquioxide

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

#### Details of the supplier of the safety data sheet

##### Company

Alfa Aesar  
Thermo Fisher Scientific Chemicals, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Tel: 800-343-0660  
Fax: 800-322-4757  
**Email:** tech@alfa.com  
www.alfa.com

**Emergency Telephone Number** During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660.  
After normal business hours, call Carechem 24 at (866) 928-0789.

### 2. Hazard(s) identification

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious Eye Damage/Eye Irritation

Category 2

#### Label Elements

##### **Signal Word**

Warning

##### **Hazard Statements**

Causes serious eye irritation

**Precautionary Statements****Prevention**

Wash face, hands and any exposed skin thoroughly after handling

Wear eye/face protection

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

**Hazards not otherwise classified (HNOC)**

None identified

### 3. Composition/Information on Ingredients

| Component         | CAS No    | Weight % |
|-------------------|-----------|----------|
| Vanadium trioxide | 1314-34-7 | 99       |

### 4. First-aid measures

**General Advice**

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

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

**Inhalation**

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.

**Ingestion**

Do NOT induce vomiting. Call a physician or poison control center immediately.

**Most important symptoms and effects**

None reasonably foreseeable.

**Notes to Physician**

Treat symptomatically

### 5. Fire-fighting measures

**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media**

No information available

**Flash Point  
Method -**

No information available  
No information available

|                                         |                          |
|-----------------------------------------|--------------------------|
| <b>Autoignition Temperature</b>         | No information available |
| <b>Explosion Limits</b>                 |                          |
| <b>Upper</b>                            | No data available        |
| <b>Lower</b>                            | No data available        |
| <b>Sensitivity to Mechanical Impact</b> | No information available |
| <b>Sensitivity to Static Discharge</b>  | No information available |

**Specific Hazards Arising from the Chemical**

Non-combustible.

**Hazardous Combustion Products**

None known.

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

**NFPA**

**Health**  
3

**Flammability**  
0

**Instability**  
0

**Physical hazards**  
N/A

## 6. Accidental release measures

|                                  |                                                                                                                                                                                     |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal Precautions</b>      | Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. |
| <b>Environmental Precautions</b> | Should not be released into the environment.                                                                                                                                        |

**Methods for Containment and Clean Up** Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

## 7. Handling and storage

|                 |                                                                                                                                                                                                                                                                          |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Handling</b> | 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 then seek immediate medical assistance. |
| <b>Storage.</b> | Keep in a dry, cool and well-ventilated place. Keep container tightly closed.                                                                                                                                                                                            |

## 8. Exposure controls / personal protection

**Exposure Guidelines**

| Component         | ACGIH TLV | OSHA PEL | NIOSH IDLH                      | Mexico OEL (TWA) |
|-------------------|-----------|----------|---------------------------------|------------------|
| Vanadium trioxide |           |          | Ceiling: 0.05 mg/m <sup>3</sup> |                  |

Legend

NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

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

**Personal Protective Equipment**

|                                 |                                                                                                                                                                             |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye/face Protection</b>      | 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. |
| <b>Skin and body protection</b> | 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.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

|                                               |                          |
|-----------------------------------------------|--------------------------|
| <b>Physical State</b>                         | Powder Solid             |
| <b>Appearance</b>                             | Black                    |
| <b>Odor</b>                                   | No information available |
| <b>Odor Threshold</b>                         | No information available |
| <b>pH</b>                                     | Not applicable           |
| <b>Melting Point/Range</b>                    | 1940 °C / 3524 °F        |
| <b>Boiling Point/Range</b>                    | No information available |
| <b>Flash Point</b>                            | No information available |
| <b>Evaporation Rate</b>                       | Not applicable           |
| <b>Flammability (solid,gas)</b>               | No information available |
| <b>Flammability or explosive limits</b>       |                          |
| Upper                                         | No data available        |
| Lower                                         | No data available        |
| <b>Vapor Pressure</b>                         | No information available |
| <b>Vapor Density</b>                          | Not applicable           |
| <b>Specific Gravity</b>                       | 4.870                    |
| <b>Solubility</b>                             | No information available |
| <b>Partition coefficient; n-octanol/water</b> | No data available        |
| <b>Autoignition Temperature</b>               | No information available |
| <b>Decomposition Temperature</b>              | No information available |
| <b>Viscosity</b>                              | Not applicable           |
| <b>Molecular Formula</b>                      | O3 V2                    |
| <b>Molecular Weight</b>                       | 149.88                   |

## 10. Stability and reactivity

|                                         |                                            |
|-----------------------------------------|--------------------------------------------|
| <b>Reactive Hazard</b>                  | None known, based on information available |
| <b>Stability</b>                        | Air sensitive.                             |
| <b>Conditions to Avoid</b>              | Exposure to air.                           |
| <b>Incompatible Materials</b>           | Strong oxidizing agents                    |
| <b>Hazardous Decomposition Products</b> | None under normal use conditions           |
| <b>Hazardous Polymerization</b>         | No information available.                  |
| <b>Hazardous Reactions</b>              | None under normal processing.              |

## 11. Toxicological information

**Acute Toxicity**
**Product Information**  
**Component Information**

| Component         | LD50 Oral                 | LD50 Dermal               | LC50 Inhalation              |
|-------------------|---------------------------|---------------------------|------------------------------|
| Vanadium trioxide | LD50 = 5639 mg/kg ( Rat ) | LD50 > 2500 mg/kg ( Rat ) | LC50 > 6.65 mg/L ( Rat ) 4 h |

**Toxicologically Synergistic Products** No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation** No information available

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component         | CAS No    | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|-------------------|-----------|------------|------------|------------|------------|------------|
| Vanadium trioxide | 1314-34-7 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** No information available

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

**Persistence and Degradability** Insoluble in water

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Is not likely mobile in the environment due its low water solubility.

## 13. Disposal considerations

**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.

## 14. Transport information

**DOT** Not regulated

**TDG** Not regulated

**IATA** Not regulated

**IMDG/IMO** Not regulated

## 15. Regulatory information

### United States of America Inventory

| Component         | CAS No    | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|-------------------|-----------|------|-----------------------------------------------|-----------------------------|
| Vanadium trioxide | 1314-34-7 | X    | ACTIVE                                        | -                           |

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

-' - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)**

Not applicable

**TSCA 12(b)** - Notices of Export

Not applicable

**International Inventories**

X = listed, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (KECL), China (IECSC), Japan (ENCS), Philippines (PICCS), Taiwan (TCSI), Japan (ISHL), New Zealand (NZIoC), Japan (ISHL).

| Component         | CAS No    | DSL | NDSL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|-------------------|-----------|-----|------|-----------|-------|------|------|------|-------|----------|
| Vanadium trioxide | 1314-34-7 | -   | X    | 215-230-9 | X     | X    | X    | -    | -     | KE-12751 |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)**U.S. Federal Regulations****SARA 313**

| Component         | CAS No    | Weight % | SARA 313 - Threshold Values % |
|-------------------|-----------|----------|-------------------------------|
| Vanadium trioxide | 1314-34-7 | 99       | 1.0                           |

**SARA 311/312 Hazard Categories** See section 2 for more information**CWA (Clean Water Act)** Not applicable**Clean Air Act** Not applicable**OSHA - Occupational Safety and Health Administration** Not applicable**CERCLA** Not applicable**California Proposition 65** This product does not contain any Proposition 65 chemicals.**U.S. State Right-to-Know Regulations**

| Component         | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|-------------------|---------------|------------|--------------|----------|--------------|
| Vanadium trioxide | -             | X          | -            | -        | -            |

**U.S. Department of Transportation**

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.**Other International Regulations****Mexico - Grade** No information available**Authorisation/Restrictions according to EU REACH**

## Safety, health and environmental regulations/legislation specific for the substance or mixture

| Component         | CAS No    | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|-------------------|-----------|----------|------------------------------|---------------------------|--------------------------------------------|
| Vanadium trioxide | 1314-34-7 | Listed   | Not applicable               | Not applicable            | Not applicable                             |

| Component         | CAS No    | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|-------------------|-----------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------|------------------------------------|
| Vanadium trioxide | 1314-34-7 | Not applicable                                                                            | Not applicable                                                                           | Not applicable             | Not applicable                     |

**16. Other information****Prepared By**

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**Revision Date**

10-Mar-2022

**Print Date**

10-Mar-2022

**Revision Summary**

SDS authoring systems update, replaces ChemGes SDS No. 1314-34-7.

**Disclaimer**

The information provided in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

**End of SDS**