



SAFETY DATA SHEET

MATERION

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

1.1. Product identifier

Name of the substance Vanadium Oxide (V2O3)
Identification number 1314-34-7 (CAS number)
Synonyms None.
Document number V-MSDS0031
Issue date 05-May-2015
Version number 01

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

Identified uses Not available.
Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

Supplier

Company name Materion Advanced Chemicals Inc.
Address 407 N. 13th Street
1316 W. St. Paul Avenue
Milwaukee, WI 53233
United States
Division Milwaukee
Telephone 414.212.0257
e-mail advancedmaterials@materion.com
Contact person Noreen Atkinson

1.4. Emergency telephone number

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

Classification T;R25, Xn;R20

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards

| | | |
|----------------------------|------------|----------------------------|
| Acute toxicity, oral | Category 3 | H301 - Toxic if swallowed. |
| Acute toxicity, inhalation | Category 4 | H332 - Harmful if inhaled. |

Hazard summary

Physical hazards Not classified for physical hazards.
Health hazards Harmful by inhalation. Toxic if swallowed.
Environmental hazards Not classified for hazards to the environment.
Specific hazards Not available.
Main symptoms Not available.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: vanadium oxide
Hazard pictograms None.
Signal word Danger
Hazard statements

| | |
|------|---------------------|
| H301 | Toxic if swallowed. |
| H332 | Harmful if inhaled. |

Precautionary statements

Prevention
P261 Avoid breathing dust.

P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.

Response

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P330 Rinse mouth.

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information None.

2.3. Other hazards None known.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

| Chemical name | % | CAS-No. / EC No. | REACH Registration No. | INDEX No. | Notes |
|------------------------|--|------------------------|------------------------|-----------|-------|
| vanadium oxide | 100 | 1314-34-7 215-230-9 | - | - | |
| Classification: | DSD: T;R25, Xn;R20 | | | | |
| | CLP: Acute Tox. 3;H301, Acute Tox. 4;H332 | | | | |

SECTION 4: First aid measures

General information Not available.

4.1. Description of first aid measures

Inhalation Not available.

Skin contact Not available.

Eye contact Not available.

Ingestion Not available.

4.2. Most important symptoms and effects, both acute and delayed Not available.

4.3. Indication of any immediate medical attention and special treatment needed Not available.

SECTION 5: Firefighting measures

General fire hazards Not available.

5.1. Extinguishing media

Suitable extinguishing media Not available.

Unsuitable extinguishing media Not available.

5.2. Special hazards arising from the substance or mixture Not available.

5.3. Advice for firefighters

Special protective equipment for firefighters Not available.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

| | |
|-----------------------------|----------------|
| For non-emergency personnel | Not available. |
| For emergency responders | Not available. |

6.2. Environmental precautions Not available.

6.3. Methods and material for containment and cleaning up Not available.

6.4. Reference to other sections Not available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Not available.

7.2. Conditions for safe storage, including any incompatibilities Not available.

7.3. Specific end use(s) Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| | |
|--|--|
| Occupational exposure limits | No exposure limits noted for ingredient(s). |
| Biological limit values | No biological exposure limits noted for the ingredient(s). |
| Recommended monitoring procedures | Not available. |
| Derived no-effect level (DNEL) | Not available. |
| Predicted no effect concentrations (PNECs) | Not available. |

8.2. Exposure controls

Appropriate engineering controls Not available.

Individual protection measures, such as personal protective equipment

| | |
|---------------------------------|----------------|
| General information | Not available. |
| Eye/face protection | Not available. |
| Skin protection | |
| - Hand protection | Not available. |
| - Other | Not available. |
| Respiratory protection | Not available. |
| Thermal hazards | Not available. |
| Hygiene measures | Not available. |
| Environmental exposure controls | Not available. |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

| | |
|---|-------------------|
| Physical state | Solid. |
| Form | Not available. |
| Colour | Not available. |
| Odour | Not applicable. |
| Odour threshold | Not available. |
| pH | Not available. |
| Melting point/freezing point | 1940 °C (3524 °F) |
| Initial boiling point and boiling range | Not available. |

| | |
|---|------------------------|
| Flash point | Not available. |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not applicable. |
| Upper/lower flammability or explosive limits | |
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |
| Vapour pressure | Not available. |
| Vapour density | Not available. |
| Relative density | Not available. |
| Solubility(ies) | |
| Solubility (water) | Not available. |
| Solubility (other) | Not available. |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Explosive properties | Not available. |
| Oxidizing properties | Not available. |
| 9.2. Other information | |
| Density | 4,87 g/cm ³ |
| Molecular formula | O3-V2 |
| Molecular weight | 149,88 g/mol |
| Specific gravity | 4,87 |

SECTION 10: Stability and reactivity

| | |
|--|----------------|
| 10.1. Reactivity | Not available. |
| 10.2. Chemical stability | Not available. |
| 10.3. Possibility of hazardous reactions | Not available. |
| 10.4. Conditions to avoid | Not available. |
| 10.5. Incompatible materials | Not available. |
| 10.6. Hazardous decomposition products | Not available. |

SECTION 11: Toxicological information

| | |
|---|----------------|
| General information | Not available. |
| Information on likely routes of exposure | |
| Inhalation | Not available. |
| Skin contact | Not available. |
| Eye contact | Not available. |
| Ingestion | Not available. |
| Symptoms | Not available. |

11.1. Information on toxicological effects

| Product | Species | Test results |
|--------------------------------|---------|-----------------|
| vanadium oxide (CAS 1314-34-7) | | |
| Acute | | |
| Dermal | | |
| LD50 | Rat | > 2500 mg/kg |
| Inhalation | | |
| LC50 | Rat | 4 mg/l, 4 Hours |
| Oral | | |
| LD50 | Mouse | 130 mg/kg |

| | |
|---|----------------|
| Skin corrosion/irritation | Not available. |
| Serious eye damage/eye irritation | Not available. |
| Respiratory sensitisation | Not available. |
| Skin sensitisation | Not available. |
| Germ cell mutagenicity | Not available. |
| Carcinogenicity | Not available. |
| Reproductive toxicity | Not available. |
| Specific target organ toxicity - single exposure | Not available. |
| Specific target organ toxicity - repeated exposure | Not available. |
| Aspiration hazard | Not available. |
| Mixture versus substance information | Not available. |
| Other information | Not available. |

SECTION 12: Ecological information

| | |
|--|---|
| 12.1. Toxicity | No toxicity data noted for the ingredient(s). |
| 12.2. Persistence and degradability | Not available. |
| 12.3. Bioaccumulative potential | Not available. |
| Partition coefficient n-octanol/water (log Kow) | Not available. |
| Bioconcentration factor (BCF) | Not available. |
| 12.4. Mobility in soil | Not available. |
| 12.5. Results of PBT and vPvB assessment | Not a PBT or vPvB substance or mixture. |
| 12.6. Other adverse effects | Not available. |

SECTION 13: Disposal considerations

| | |
|--------------------------------------|----------------|
| 13.1. Waste treatment methods | |
| Residual waste | Not available. |
| Contaminated packaging | Not available. |
| EU waste code | Not available. |

SECTION 14: Transport information

ADR

Not regulated as dangerous goods.

RID

Not regulated as dangerous goods.

ADN

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I, as amended

Not listed.

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II, as amended

Not listed.

Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use

Not regulated.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended

Not listed.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding, as amended

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances

Not listed.

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended

Not listed.

Directive 94/33/EC on the protection of young people at work, as amended

Not listed.

National regulations

Not available.

15.2. Chemical safety assessment

Not available.

SECTION 16: Other information

List of abbreviations

Not available.

References

Not available.

Information on evaluation method leading to the classification of mixture

Not available.

Full text of any statements or R-phrases and H-statements under Sections 2 to 15

R20 Harmful by inhalation.
R25 Toxic if swallowed.
H301 Toxic if swallowed.
H332 Harmful if inhaled.

Revision information

None.

Training information

Not available.