

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : SILVER VANADATE REAGENT
Product code : AEB1009, AEB1059, AEB1142, AEB1144

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Laboratory chemicals

1.3. Supplier

Alpha Resources LLC
3090 Johnson Rd.
Stevensville, Michigan 49127
USA
T (269)465-5559
info@alpharesources.com - www.alpharesources.com

1.4. Emergency telephone number

Emergency number : CHEMTREC Emergency Phone Number: (800) 424-9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Acute toxicity (inhalation:dust,mist) Category 4 H332 Harmful if inhaled
Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning
Hazard statements (GHS US) : H332 - Harmful if inhaled
Precautionary statements (GHS US) : P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
P271 - Use only outdoors or in a well-ventilated area.
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
P312 - Call a poison center or doctor if you feel unwell.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Name | Product identifier | % | GHS US classification |
|-----------------|--------------------|----|---|
| ZIRCONIUM OXIDE | CAS-No.: 1314-23-4 | 75 | Acute Tox. 4 (Inhalation:dust,mist), H332 |

Full text of hazard classes and H-statements : see section 16

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SECTION 4: First-aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|--|
| First-aid measures general | : Call a poison center/doctor/physician if you feel unwell. |
| First-aid measures after inhalation | : Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell. |
| First-aid measures after skin contact | : Wash skin with plenty of water. |
| First-aid measures after eye contact | : Rinse eyes with water as a precaution. |
| First-aid measures after ingestion | : Call a poison center/doctor/physician if you feel unwell. |

4.2. Most important symptoms and effects (acute and delayed)

No additional information available

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

| | |
|------------------------------|----------------------------------|
| Suitable extinguishing media | : Water spray. Dry powder. Foam. |
|------------------------------|----------------------------------|

5.2. Specific hazards arising from the chemical

| | |
|--|--------------------------------|
| Hazardous decomposition products in case of fire | : Toxic fumes may be released. |
|--|--------------------------------|

5.3. Special protective equipment and precautions for fire-fighters

| | |
|--------------------------------|--|
| Protection during firefighting | : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. |
|--------------------------------|--|

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

| | |
|----------------------|---|
| Emergency procedures | : Ventilate spillage area. Avoid breathing dust/fume/gas/mist/vapors/spray. |
|----------------------|---|

6.1.2. For emergency responders

| | |
|----------------------|---|
| Protective equipment | : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection". |
|----------------------|---|

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

| | |
|-------------------------|---|
| Methods for cleaning up | : Mechanically recover the product. |
| Other information | : Dispose of materials or solid residues at an authorized site. |

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

| | |
|-------------------------------|--|
| Precautions for safe handling | : Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. |
| Hygiene measures | : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. |

7.2. Conditions for safe storage, including any incompatibilities

| | |
|--------------------|--|
| Storage conditions | : Store in a well-ventilated place. Keep cool. |
|--------------------|--|

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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No additional information available

ZIRCONIUM OXIDE (1314-23-4)

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|----------------------|
| Physical state | : Solid |
| Color | : Yellow |
| Odor | : odorless |
| Odor threshold | : No data available |
| pH | : No data available. |
| Melting point | : No data available. |
| Freezing point | : Not applicable |
| Boiling point | : No data available |
| Flash point | : Not applicable |
| Relative evaporation rate (butyl acetate=1) | : No data available |
| Flammability (solid, gas) | : Non flammable. |
| Vapor pressure | : No data available |
| Relative vapor density at 20°C | : No data available. |
| Relative density | : No data available. |
| Solubility | : No data available |
| Partition coefficient n-octanol/water (Log Pow) | : No data available |
| Auto-ignition temperature | : No data available. |
| Decomposition temperature | : No data available |
| Viscosity, kinematic | : Not applicable |
| Viscosity, dynamic | : No data available |
| Explosion limits | : Not applicable |
| Explosive properties | : No data available |
| Oxidizing properties | : No data available |

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9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Harmful if inhaled.

| SILVER VANADATE REAGENT | |
|-----------------------------------|--|
| ATE US (dust, mist) | 2 mg/l/4h |
| ZIRCONIUM OXIDE (1314-23-4) | |
| LD50 oral rat | > 5000 mg/kg body weight Animal: rat, Animal sex: female, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method), Guideline: EU Method B.1 tris (Acute Oral Toxicity - Acute Toxic Class Method) |
| LC50 Inhalation - Rat (Dust/Mist) | > 4.3 mg/l Source: ECHA |
| ATE US (dust, mist) | 1.5 mg/l/4h |
| Skin corrosion/irritation | : Not classified pH: No data available. |
| Serious eye damage/irritation | : Not classified pH: No data available. |
| Respiratory or skin sensitization | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |
| Reproductive toxicity | : Not classified |
| STOT-single exposure | : Not classified |
| STOT-repeated exposure | : Not classified |
| Aspiration hazard | : Not classified |
| Viscosity, kinematic | : Not applicable |

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

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| | |
|------------------------------------|---|
| LC50 - Fish [1] | > 100 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio) |
| EC50 - Crustacea [1] | > 100 mg/l Source: ECHA |
| EC50 - Other aquatic organisms [1] | 100 mg/l |
| EC50 72h - Algae [1] | > 100 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus) |

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

DOT NA No : UN3285
UN-No. (TDG) : UN3285
UN-No. (IMDG) : 3285
UN-No. (IATA) : 3285

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Vanadium compound, n.o.s.
Proper Shipping Name (TDG) : VANADIUM COMPOUND, N.O.S.
Proper Shipping Name (IMDG) : VANADIUM COMPOUND, N.O.S.
Proper Shipping Name (IATA) : Vanadium compound, n.o.s.

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : 6.1
Hazard labels (DOT) : 6.1



TDG

Transport hazard class(es) (TDG) : 6.1
Hazard labels (TDG) : 6.1



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IMDG

Transport hazard class(es) (IMDG) : 6.1
Hazard labels (IMDG) : 6.1



IATA

Transport hazard class(es) (IATA) : 6.1
Hazard labels (IATA) : 6.1



14.4. Packing group

Packing group (DOT) : III
Packing group (TDG) : III
Packing group (IMDG) : III
Packing group (IATA) : III

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT

UN-No.(DOT) : UN3285
DOT Special Provisions (49 CFR 172.102) : IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).
IP3 - Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner.
T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2)
TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.
DOT Packaging Exceptions (49 CFR 173.xxx) : 153
DOT Packaging Non Bulk (49 CFR 173.xxx) : 213
DOT Packaging Bulk (49 CFR 173.xxx) : 240
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 100 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 200 kg

TDG

UN-No. (TDG) : UN3285

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| | |
|---|--|
| TDG Special Provisions | : 16 - 1) The technical name of the most dangerous substance related to the primary class must be shown, in parentheses, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(i)(A) of Part 3, Documentation. The technical name must also be shown, in parentheses, on a small means of containment or on a tag following the shipping name in accordance with subsections 4.11(2) and (3) of Part 4, Dangerous Goods Safety Marks. 2) subsection (1), the technical name for the following dangerous goods is not required to be shown on a shipping document or on a small means of containment when Canadian law for domestic transport or an international convention for international transport prohibits the disclosure of the technical: a) UN1544, ALKALOID SALTS, SOLID, N.O.S. or ALKALOIDS, SOLID, N.O.S; b) UN1851, MEDICINE, LIQUID, TOXIC, N.O.S; c) UN3140, ALKALOID SALTS, LIQUID, N.O.S. or ALKALOIDS, LIQUID, N.O.S; d) UN3248, MEDICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S; or e) UN3249, MEDICINE, SOLID, TOXIC, N.O.S. An example in Canada is the "Food and Drugs Act". |
| Explosive Limit and Limited Quantity Index | : 5 kg |
| Excepted quantities (TDG) | : E1 |
| Passenger Carrying Road Vehicle or Passenger Carrying | : 100 kg |
| Railway Vehicle Index | |
| Emergency Response Guide (ERG) Number | : 151 |

IMDG

| | |
|------------------------------------|---|
| Special provision (IMDG) | : 223, 274 |
| Limited quantities (IMDG) | : 5 kg |
| Excepted quantities (IMDG) | : E1 |
| Packing instructions (IMDG) | : P002, LP02 |
| IBC packing instructions (IMDG) | : IBC08 |
| IBC special provisions (IMDG) | : B3 |
| Tank instructions (IMDG) | : T1 |
| Tank special provisions (IMDG) | : TP33 |
| EmS-No. (Fire) | : F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE |
| EmS-No. (Spillage) | : S-A - SPILLAGE SCHEDULE Alfa - TOXIC SUBSTANCES |
| Stowage category (IMDG) | : A |
| Properties and observations (IMDG) | : Toxic if swallowed, by skin contact or by inhalation. |

IATA

| | |
|--|----------|
| PCA Excepted quantities (IATA) | : E1 |
| PCA Limited quantities (IATA) | : Y645 |
| PCA limited quantity max net quantity (IATA) | : 10kg |
| PCA packing instructions (IATA) | : 670 |
| PCA max net quantity (IATA) | : 100kg |
| CAO packing instructions (IATA) | : 677 |
| CAO max net quantity (IATA) | : 200kg |
| Special provision (IATA) | : A3, A5 |
| ERG code (IATA) | : 6L |

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

| Name | CAS-No. | Listing | Commercial status | Flags |
|-----------------|-----------|-------------|-------------------|-------|
| ZIRCONIUM OXIDE | 1314-23-4 | Not present | - | |

15.2. International regulations

CANADA

No additional information available

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EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

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| Full text of H-phrases | |
|------------------------|--------------------|
| H332 | Harmful if inhaled |

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.