

**SAFETY DATA SHEET**

Revision Date 18-Feb-2020

Revision Number 2

**1. Identification**

**Product Name** Niobium selenide

**Cat No. :** 13101

**CAS-No** 12034-77-4  
**Synonyms** No information available

**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)

|                                                      |            |
|------------------------------------------------------|------------|
| Acute oral toxicity                                  | Category 3 |
| Acute Inhalation Toxicity - Dusts and Mists          | Category 3 |
| Specific target organ toxicity - (repeated exposure) | Category 2 |
| Target Organs - Liver.                               |            |

**Label Elements****Signal Word**

Danger

**Hazard Statements**

May cause damage to organs through prolonged or repeated exposure  
Toxic if swallowed or if inhaled

**Precautionary Statements****Prevention**

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

Do not breathe dust/fume/gas/mist/vapors/spray

**Response**

Get medical attention/advice if you feel unwell

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Call a POISON CENTER or doctor/physician

**Ingestion**

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Rinse mouth

**Storage**

Store locked up

Store in a well-ventilated place. Keep container tightly closed

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Very toxic to aquatic life with long lasting effects

### 3. Composition/Information on Ingredients

| Component                             | CAS-No     | Weight % |
|---------------------------------------|------------|----------|
| Niobium selenide (NbSe <sub>2</sub> ) | 12034-77-4 | <=100    |

### 4. First-aid measures

**General Advice**

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

**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.

**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

**Unsuitable Extinguishing Media** No information available

**Flash Point** No information available  
**Method -** 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

**Specific Hazards Arising from the Chemical**

Do not allow run-off from fire-fighting to enter drains or water courses.

**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**  
-

## 6. Accidental release measures

**Personal Precautions**

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.

**Environmental Precautions**

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

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

## 7. Handling and storage

**Handling**

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. 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.

**Storage**

Keep containers tightly closed in a dry, cool and well-ventilated place.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

| Component                             | ACGIH TLV                  | OSHA PEL                             | NIOSH IDLH                                              | Mexico OEL (TWA)           |
|---------------------------------------|----------------------------|--------------------------------------|---------------------------------------------------------|----------------------------|
| Niobium selenide (NbSe <sub>2</sub> ) | TWA: 0.2 mg/m <sup>3</sup> | (Vacated) TWA: 0.2 mg/m <sup>3</sup> | IDLH: 1 mg/m <sup>3</sup><br>TWA: 0.2 mg/m <sup>3</sup> | TWA: 0.2 mg/m <sup>3</sup> |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

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

**Engineering Measures** Ensure adequate ventilation, especially in confined areas.

#### 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 and 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.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

### 9. Physical and chemical properties

|                                               |                          |
|-----------------------------------------------|--------------------------|
| <b>Physical State</b>                         | Solid                    |
| <b>Appearance</b>                             | Black                    |
| <b>Odor</b>                                   | Odorless                 |
| <b>Odor Threshold</b>                         | No information available |
| <b>pH</b>                                     | No information available |
| <b>Melting Point/Range</b>                    | 1316 °C / 2400.8 °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>                       | No information available |
| <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>                      | NbSe <sub>2</sub>        |
| <b>Molecular Weight</b>                       | 250.83                   |

### 10. Stability and reactivity

**Reactive Hazard** None known, based on information available

**Stability** Stable under normal conditions.

**Conditions to Avoid** Incompatible products.

**Incompatible Materials** Strong oxidizing agents

**Hazardous Decomposition Products** None under normal use conditions

**Hazardous Polymerization** Hazardous polymerization does not occur.

**Hazardous Reactions** None under normal processing.

## 11. Toxicological information

### Acute Toxicity

#### Product Information

#### Component Information

**Toxicologically Synergistic** No information available

#### Products

### 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     |
|---------------------------------------|------------|------------|------------|------------|------------|------------|
| Niobium selenide (NbSe <sub>2</sub> ) | 12034-77-4 | 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** Liver

**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

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

**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

**UN-No**

UN3283

**Proper Shipping Name**

SELENIUM COMPOUND, SOLID, N.O.S.

|                             |                                  |
|-----------------------------|----------------------------------|
| <b>Technical Name</b>       | (Niobium selenide)               |
| <b>Hazard Class</b>         | 6.1                              |
| <b>Packing Group</b>        | III                              |
| <b>TDG</b>                  |                                  |
| <b>UN-No</b>                | UN3283                           |
| <b>Proper Shipping Name</b> | SELENIUM COMPOUND, SOLID, N.O.S. |
| <b>Hazard Class</b>         | 6.1                              |
| <b>Packing Group</b>        | III                              |
| <b>IATA</b>                 |                                  |
| <b>UN-No</b>                | UN3283                           |
| <b>Proper Shipping Name</b> | SELENIUM COMPOUND, SOLID, N.O.S. |
| <b>Hazard Class</b>         | 6.1                              |
| <b>Packing Group</b>        | III                              |
| <b>IMDG/IMO</b>             |                                  |
| <b>UN-No</b>                | UN3283                           |
| <b>Proper Shipping Name</b> | SELENIUM COMPOUND, SOLID, N.O.S. |
| <b>Hazard Class</b>         | 6.1                              |
| <b>Packing Group</b>        | III                              |

## 15. Regulatory information

### United States of America Inventory

| Component                             | CAS-No     | TSCA | TSCA Inventory notification - Active/Inactive | TSCA - EPA Regulatory Flags |
|---------------------------------------|------------|------|-----------------------------------------------|-----------------------------|
| Niobium selenide (NbSe <sub>2</sub> ) | 12034-77-4 | X    | ACTIVE                                        | -                           |

#### Legend:

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

X - Listed

'-' - Not Listed

**TSCA 12(b)** - Notices of Export Not applicable

### International Inventories

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

| Component                             | CAS-No     | DSL | NDL | EINECS    | PICCS | ENCS | AICS | IECSC | KECL     |
|---------------------------------------|------------|-----|-----|-----------|-------|------|------|-------|----------|
| Niobium selenide (NbSe <sub>2</sub> ) | 12034-77-4 | -   | X   | 234-811-8 | -     | -    | -    | -     | KE-25889 |

### U.S. Federal Regulations

#### SARA 313

| Component                             | CAS-No     | Weight % | SARA 313 - Threshold Values % |
|---------------------------------------|------------|----------|-------------------------------|
| Niobium selenide (NbSe <sub>2</sub> ) | 12034-77-4 | <=100    | 1.0                           |

**SARA 311/312 Hazard Categories** See section 2 for more information

#### CWA (Clean Water Act)

| Component                             | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|---------------------------------------|----------------------------|-----------------------------|------------------------|---------------------------|
| Niobium selenide (NbSe <sub>2</sub> ) | -                          | -                           | X                      | -                         |

#### Clean Air Act

| Component                             | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|---------------------------------------|-----------|-------------------------|-------------------------|
| Niobium selenide (NbSe <sub>2</sub> ) | X         |                         | -                       |

**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 |
|---------------------------------------|---------------|------------|--------------|----------|--------------|
| Niobium selenide (NbSe <sub>2</sub> ) | -             | X          | X            | X        | 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

## 16. Other information

**Prepared By** Health, Safety and Environmental Department  
Email: tech@alfa.com  
www.alfa.com

**Revision Date** 18-Feb-2020  
**Print Date** 18-Feb-2020  
**Revision Summary** SDS authoring systems update, replaces ChemGes SDS No. 12034-77-4.

**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**