

# Se Powder / Selenium Powder

**US Research Nanomaterials, Inc.**

**www.us-nano.com**

## SAFTY DATA SHEET

Revised Date 7/27/2020

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### 1.1 Product identifiers

Product name: Se Powder / Selenium Powder  
Product Number : US6016  
CAS#: 7782-49-2

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

Identified uses : Research, synthesis of nanomaterial dispersions, Laboratory chemicals

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

Company: [US Research Nanomaterials, Inc.](http://www.us-nano.com)  
3302 Twig Leaf Lane  
Houston, TX 77084  
USA  
Telephone: +1 832-460-3661  
Fax: +1 281-492-8628

#### 1.4 Emergency telephone number

Emergency Phone # : (832) 359-7887

### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)  
Acute toxicity, Oral (Category 3), H301  
Acute toxicity, Inhalation (Category 3), H331  
Specific target organ toxicity - repeated exposure (Category 2), H373  
Long-term (chronic) aquatic hazard (Category 4), H413  
For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 2.2 GHS Label elements, including precautionary statements



Pictogram

Signal word

Danger

Hazard statement(s)

H301 + H331 Toxic if swallowed or if inhaled

H373 May cause damage to organs through prolonged or repeated exposure

H413 May cause long lasting harmful effects to aquatic life.

Precautionary statement(s)

P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.

P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor.

P314 Get medical advice/ attention if you feel unwell.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

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

None

## **3. COMPOSITION/INFORMATION ON INGREDIENTS**

### **3.1 Substances**

Formula : Se

Molecular weight : 78.96 g/mol

CAS-No. : 7782-49-2

EC-No. : 231-957-4

Index-No. : 034-001-00-2

### **Hazardous components**

Component: Selenium, powder

Classification: Acute Tox. 3; STOT RE 2; Aquatic Chronic 4; H301, H331, H373, H413

Concentration: <=100%

For the full text of the H-Statements mentioned in this Section, see Section 16.

## **4. FIRST AID MEASURES**

### **4.1 Description of first aid measures**

#### **General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### **If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### **In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

#### **In case of eye contact**

Flush eyes with water as a precaution.

#### **If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### **4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in

section 11

#### **4.3 Indication of any immediate medical attention and special treatment needed**

no data available

### **5. FIREFIGHTING MEASURES**

#### **5.1 Extinguishing media**

##### **Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide

#### **5.2 Special hazards arising from the substance or mixture**

Metal oxides

#### **5.3 Advice for firefighters**

Wear self contained breathing apparatus for firefighting if necessary.

#### **5.4 Further information**

Use water spray to cool unopened containers.

### **6. ACCIDENTAL RELEASE MEASURES**

#### **6.1 Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

#### **6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

#### **6.3 Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

#### **6.4 Reference to other sections**

For disposal see section 13.

### **7. HANDLING AND STORAGE**

#### **7.1 Precautions for safe handling**

Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.2.

#### **7.2 Conditions for safe storage, including any incompatibilities**

Keep container tightly closed in a dry and well-ventilated place.

Store under inert gas. Keep in a dry place.

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

#### Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. **Personal protective equipment**

#### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- a) Appearance: Form: powder
- b) Odor: No data available
- c) Odor Threshold: no data available
- d) pH: no data available
- e) Melting point/freezing point: Melting point/range: 217 °C (423 °F) - lit.
- f) Initial boiling point and boiling range: 684.9 °C 1264.8 °F - lit.
- g) Flash point: No data available
- h) Evaporation rate: no data available
- i) Flammability (solid, gas): The substance or mixture is a flammable solid with the category 1
- j) Upper/lower flammability or explosive limits: No data available
- k) Vapor pressure: No data available
- l) Vapor density: no data available

- m) Relative density: 4.81 g/cm<sup>3</sup> at 25 °C (77 °F)
- n) Water solubility: No data available
- o) Partition coefficient - noctanol/water: No data available
- p) Auto-ignition temperature: No data available
- q) Decomposition temperature: no data available
- r) Viscosity: no data available
- s) Explosive properties: no data available
- t) Oxidizing properties: no data available

## 9.2 Other safety information

No data available

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available.

### 10.4 Conditions to avoid

Heat, flames and sparks.

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Metal oxides

Other decomposition products - No data available

In the event of fire: see section 5

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

#### Skin corrosion/irritation

slight irritation

#### Serious eye damage/eye irritation

slight irritation

#### Respiratory or skin sensitization

No data available

#### Germ cell mutagenicity

reverse mutation assay

Salmonella typhimurium

Result: negative

#### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen

by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Toxicity to fish: semi-static test LC50 - *Oncorhynchus mykiss* (rainbow trout) - > 100 mg/l - 96 h  
(OECD Test Guideline 203)

Remarks: (above the solubility limit in the test medium)

Toxicity to daphnia and other aquatic invertebrates: static test EC50 - *Daphnia magna* (Water flea) - > 100 mg/l - 48 h  
(OECD Test Guideline 202)

Remarks: (above the solubility limit in the test medium)

Toxicity to algae: static test ErC50 - *Pseudokirchneriella subcapitata* (algae) - > 100 mg/l - 72 h  
(OECD Test Guideline 201)

Remarks: (above the solubility limit in the test medium)

### 12.2 Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances

### 12.3 Bioaccumulative potential

### 12.4 Mobility in soil

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Discharge into the environment must be avoided.

## 13. DISPOSAL CONSIDERATIONS

### **13.1 Waste treatment methods**

#### **Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### **Contaminated packaging**

Dispose of as unused product.

## **14. TRANSPORT INFORMATION**

### **DOT (US)**

UN number: 3288 Class: 6.1 Packing group: III

Proper shipping name: Toxic solid, inorganic, n.o.s.

Reportable Quantity (RQ): 100 lbs

Reportable Quantity (RQ): 10 lbs

Poison Inhalation Hazard: No

### **IMDG**

UN number: 3288 Class: 6.1 Packing group: III EMS-No: F-A, S-A

Proper shipping name: Toxic solid, inorganic, n.o.s.

### **IATA**

UN number: 3288 Class: 6.1 Packing group: III

Proper shipping name: Toxic solid, inorganic, n.o.s.

## **15. REGULATORY INFORMATION**

### **SARA 302 Components**

This material does not contain any components with a section 302 EHS TPQ.

### **SARA 313 Components**

#### **SARA 311/312 Hazards**

Acute Health Hazard, Chronic Health Hazard

**Reportable Quantity** D010 lbs

## **16. OTHER INFORMATION**

### **Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.