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## Material Safety Data Sheet

### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1 Product identifiers

Product name Selenium granules  
Product number A64629  
Brand 3ASenrise  
CAS number 7782-49-2

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

Company: Anhui Senrise Technology Co., Ltd.  
Address: No.88 Weisan Road, High-Tech Industrial Development Zone, Anqing, Anhui  
Post code: 246003  
Tel: 400-005-6266  
Fax: 0556-5555368  
Email: service@3asenrise.com

#### 1.3 Emergency telephone

Emergency telephone: 0556-5500208

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

Identified uses: For R&D use only. Not for pharmaceutical, household or other uses.

### 2 HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

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

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

##### Pictogram



**Signal word: Danger**

##### Hazard statement(s)

H373 May cause damage to organs through prolonged or repeated exposure.  
H413 May cause long lasting harmful effects to aquatic life.  
H301+H331 Toxic if swallowed or if inhaled.

##### Precautionary statement(s)

##### Prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P270 Do not eat, drink or smoke when using this product.  
P264 Wash hands thoroughly after handling.  
P273 Avoid release to the environment.  
P271 Use only outdoors or in a well-ventilated area.

### Response

P314 Get medical advice/attention if you feel unwell.  
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.

### Storage

P405 Store locked up.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

### Disposal

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

## 2.3 Physical and chemical hazards

No data available

## 2.4 Health hazards

H331 Toxic if inhaled.  
H373 May cause damage to organs through prolonged or repeated exposure.  
H301 Toxic if swallowed.

## 2.5 Environmental hazards Code

H413 May cause long lasting harmful effects to aquatic life.

## 2.6 Other hazards

No data available

# 3 COMPOSITION/INFORMATION ON INGREDIENTS

## Substance / Mixture: Substance

### 3.1 Substance

Name	Selenium granules
Formula	Se
Molecular Weight	78.96
CAS	7782-49-2
Concentration	1-6mm, 99.99%(metals basis)

# 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.

### 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

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

### If swallowed

Do NOT induce vomiting. 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**

No data available.

## **5 FIREFIGHTING MEASURES**

### **5.1 Extinguishing media**

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

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

Selenium/selenium oxides Not combustible. Ambient fire may liberate hazardous vapours.

### **5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

## **6 ACCIDENTAL RELEASE MEASURES**

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

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

### **6.2 Environmental precautions**

Do not let product enter drains.

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

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

### **6.4 Reference to other section**

For disposal see section 13.

## **7 HANDLING AND STORAGE**

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

#### **Advice on safe handling**

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

#### **Advice on protection against fire and explosion**

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### **Hygiene measures**

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

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

#### **Storage conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Long term storage: RT

## **8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **8.1 Control parameters**

No data available.

### **8.2 Personal protective equipment**

#### **Eye/face protection**

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

#### **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.

#### **Body protection**

Flame retardant antistatic protective clothing.

### **Respiratory protection**

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

### **Control of environmental exposure**

Do not let product enter drains. Risk of explosion.

## **9 PHYSICAL AND CHEMICAL PROPERTIES**

### **9.1 Information on basic physical and chemical properties**

a) Appearance	Grey to dark grey granules
b) Odor	No data available
c) pH	No data available
d) Melting point/freezing point	217 ° C – lit.
e) Initial boiling point and boiling range	684.9 ° C – lit.
f) Upper/lower flammability or explosive limits	No data available
g) Flash point	No data available
h) Evaporation rate	No data available
i) Vapor pressure	> 0.001 hPa at 20 ° C
j) Vapor density	No data available
k) Density	4.81 g/cm <sup>3</sup> at 25 ° C – lit.
l) Water solubility	0.1 g/l at 20.9 ° C – insoluble
m) Partition coefficient: n-octanol/water	No data available
n) Autoignition temperature	220 – 250 ° C at 1,013.25 hPa – Relative self-ignition temperature for solids
o) Decomposition temperature	No data available
p) Flammability	No data available

## **10 STABILITY AND REACTIVITY**

### **10.1 Chemical stability**

No data available.

### **10.2 Conditions to avoid**

No data available.

### **10.3 Incompatible materials**

No data available

### **10.4 Hazardous decomposition products**

In the event of fire: see section 5.

## **11 TOXICOLOGICAL INFORMATION**

### **11.1 Acute toxicity**

LD50 Oral

No data available

LC50 Inhalation

No data available

LD50 Dermal

No data available

### **11.2 Skin corrosion/irritation**

Skin – reconstructed human epidermis (RhE) Result: No skin irritation

### **11.3 Serious eye damage/eye irritation**

Eyes – Bovine cornea Result: No eye irritation – 4 h

### **11.4 Respiratory or skin sensitization**

Local lymph node assay (LLNA) – Mouse Result: negative

### **11.5 Germ cell mutagenicity**

Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Result: negative Test Type: Chromosome aberration test Species: Mouse Cell type: Bone marrow Application Route: Intraperitoneal Result: ne

### **11.6 Carcinogenicity**

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

### **11.7 Reproductive toxicity**

No data available

### **11.8 Specific target organ toxicity - single exposure**

No data available

### **11.9 Specific target organ toxicity - repeated exposure**

May cause damage to organs through prolonged or repeated exposure. Aspiration hazard

### **11.10 Aspiration hazard**

no data available.

### **11.11 Additional Information**

Repeated dose toxicity – Rat – male and female – Oral – 13 Weeks – NOAEL (No observed adverse effect level) – 0.4 mg/kg Remarks: (in analogy to similar products) The value is given in analogy to the following substances: Sodium selenite RTECS: VS7700000 anemia, Vomiting, Diarrhea, Cough, Difficulty in breathing, Acute selenium poisoning produces central nervous system effects, which include nervousness, convulsions, and drowsiness. Other signs of intoxication can include skin eruptions, lassitude, gastrointestinal distress, teeth that are discolored or decayed, odorous ("garlic") breath, and partial loss of hair and nails. Chronic exposure by inhalation can produce symptoms that include pallor, coating of the tongue, anemia, irritation of the mucosa, lumbar pain, liver and spleen damage, as well as any of the other previously mentioned symptoms. Chronic contact with selenium compounds may cause garlic odor of breath and sweat, dermatitis, and moderate emotional instability. Dermatitis, garlic-like breath odor, pallor, nervousness, depression To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. After absorption: CNS disorders Dizziness muscular weakness Headache cardiovascular disorders Shortness of breath somnolence Cough Unconsciousness Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice.

## **12 ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

Toxicity to fish:

semi-static test LC50 – Oncorhynchus mykiss (rainbow trout) – > 100 mg/l – 96 h

Toxicity to daphnia and other aquatic:

static test EC50 – Daphnia magna (Water flea) – > 100 mg/l – 48 h Remarks: (above the solubility limit in the test medium)

Toxicity to algae:

static test ErC50 – Pseudokirchneriella subcapitata (algae) – > 100 mg/l – 72 h

Toxicity to bacteria:

static test EC50 – activated sludge – > 3,200 mg/l – 3 h

### **12.2 Persistence and degradability**

The methods for determining the biological degradability are to inorganic substances.

### **12.3 Bioaccumulative potential**

Bioaccumulation Lepomis macrochirus - 60 d - 640 µg/l (Selenium) Bioconcentration factor (BCF): 7.7

#### **12.4 Mobility in soil**

No data available

#### **12.5 Other adverse effects**

Discharge into the environment must be avoided.

### **13 DISPOSAL CONSIDERATIONS**

#### **13.1 Waste treatment methods**

##### **Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Observe all federal, state and local regulations when disposing of the substance.

##### **Contaminated packaging**

Disposal must be made according to official regulations.

### **14 TRANSPORT INFORMATION**

#### **14.1 UN number**

ADR/RID: 3288 IMDG: 3288 IATA: 3288

#### **14.2 UN proper shipping name**

ADR/RID: SELENIUM GRANULES

IMDG: SELENIUM GRANULES

IATA-DGR: Selenium granules

#### **14.3 Transport hazard class(es)**

ADR/RID: 6.1 IMDG: 6.1 IATA: 6.1

#### **14.4 Packaging group**

ADR/RID: III IMDG: III IATA: III

#### **14.5 Environmental hazards**

ADR/RID: no IMDG Marine pollutant: no IATA: no

#### **14.6 Special precautions for user**

No data available

### **15. REGULATORY INFORMATION**

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

Applicable regulations

Regulations on the Control over Safety of Dangerous Chemicals.

This product is included in the list of dangerous chemicals.

Please pay attention to waste disposal and meet the requirements of local regulations.

### **16. OTHER INFORMATION**

#### **Abbreviations and acronyms**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Dangerous Goods

IATA: International Air Transport Association

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

CAS: Chemical Abstracts Service (division of the American Chemical Society)

#### **Further information**

The above safety technical information is for reference only, because many physical and chemical properties are not entirely clear. Please consult information carefully before use and use after confirmation.

Anhui Senrise Technology Co., Ltd. shall not be held liable for any damage resulting from handling or from contact with the above product. More terms of use, see invoice information for details.

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