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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 Cerium sputtering target  
Product number Bce003  
Brand 3ASenrise  
CAS number 7440-45-1

#### 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

Flammable solids (Category 1), H228  
Substances and mixtures which in contact with water emit flammable gases (Category 2), H261  
Acute toxicity, Oral (Category 4), H302  
Acute toxicity, Inhalation (Category 4), H332  
Acute toxicity, Dermal (Category 4), H312  
Skin corrosion/irritation (Category 2), H315  
Serious eye damage/eye irritation (Category 2A), H319  
Specific target organ toxicity – single exposure (Category 1), H370  
Specific target organ toxicity – single exposure (Category 3), respiratory tract irritation, H335  
Short-term (acute) aquatic hazard (Category 1), H400  
Long-term (chronic) aquatic hazard (Category 1), H410

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

##### Pictogram



**Signal word: Danger**

**Hazard statement(s)**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H228 Flammable solid.

H261 In contact with water releases flammable gas.

H335 May cause respiratory irritation.

H410 Very toxic to aquatic life with long lasting effects.

H370 Causes damage to organs.

H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.

**Precautionary statement(s)**

**Prevention**

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

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire.

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

P264 Wash hands thoroughly after handling.

P273 Avoid release to the environment.

P262 Do not get in eyes, on skin, or on clothing.

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

P231+P232 Handle under inert gas. Protect from moisture.

**Response**

P332+P313 IF SKIN irritation occurs: Get medical advice/attention.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 IF eye irritation persists: Get medical advice/attention.

P391 Collect spillage. Hazardous to the aquatic environment

P370+P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

P308+P311 IF exposed or concerned: Call a POISON CENTER/ doctor.

P304+P340+P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.

P302+P352+P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell.

P301+P312+P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

**Storage**

P405 Store locked up.

P402+P404 Store in a dry place. Store in a closed container.

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

H228 Flammable solid.

H261 In contact with water releases flammable gas.

## 2.4 Health hazards

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H370 Causes damage to organs.

## 2.5 Environmental hazards Code

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

## 2.6 Other hazards

No data available

# 3 COMPOSITION/INFORMATION ON INGREDIENTS

## Substance / Mixture: Substance

### 3.1 Substance

|                  |                                      |
|------------------|--------------------------------------|
| Name             | Cerium sputtering target             |
| Formula          | Ce                                   |
| Molecular Weight | 140.12                               |
| CAS              | 7440-45-1                            |
| Concentration    | Diam:25mm, Thickness:9mm, 99. 9%(RE) |

# 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

Water Foam Carbon dioxide (CO2) Dry powder

## 5.2 Special hazards arising from the substance or mixture

cerium oxides

### **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

Silver-grey plate (After surface treatment)

|                                                 |                                 |
|-------------------------------------------------|---------------------------------|
| b) Odor                                         | No data available               |
| c) pH                                           | No data available               |
| d) Melting point/freezing point                 | 795 ° C                         |
| e) Initial boiling point and boiling range      | No data available               |
| 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                               | No data available               |
| j) Vapor density                                | No data available               |
| k) Density                                      | 6.7 g/cm <sup>3</sup> at 20 ° C |
| l) Water solubility                             | No data available               |
| m) Partition coefficient: n-octanol/water       | No data available               |
| n) Autoignition temperature                     | No data available               |
| 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**

Strong acids, Halogens, Strong oxidizing agents, Zinc

### **10.4 Hazardous decomposition products**

In the event of fire: see section 5.

## **11 TOXICOLOGICAL INFORMATION**

### **11.1 Acute toxicity**

LD50 Oral

– Rat – male and female – > 5,000 mg/kg

LC50 Inhalation

– Rat – male and female – 4 h – > 5.05 mg/l – dust/mist

LD50 Dermal

No data available

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

No data available

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

No data available

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

No data available

### **11.5 Germ cell mutagenicity**

Test Type: Mutagenicity (mammal cell test): chromosome aberration. Test system: Human lymphocytes Metabolic activation: with and without metabolic activation Result: negative

### **11.6 Carcinogenicity**

No data available

### **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**

No data available

### **11.10 Aspiration hazard**

no data available.

### **11.11 Additional Information**

No data available

## **12 ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

Toxicity to fish:

semi-static test LL50 – Oncorhynchus mykiss (rainbow trout) – > 100 mg/l – 96 h

Toxicity to daphnia and other aquatic:

static test LL50 – Daphnia magna (Water flea) – > 100 mg/l – 48 h

Toxicity to algae:

static test EL50 – Desmodesmus subspicatus (green algae) – > 100 mg/l – 72 h

Toxicity to bacteria:

static test EC50 – activated sludge – > 1,000 mg/l – 3 h

### **12.2 Persistence and degradability**

No data available

### **12.3 Bioaccumulative potential**

No data available

### **12.4 Mobility in soil**

No data available

### **12.5 Other adverse effects**

No data available

## **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: 1333 IMDG: 1333 IATA: 1333

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

ADR/RID: CERIUM SPUTTERING TARGET

IMDG: CERIUM SPUTTERING TARGET

IATA-DGR: Cerium sputtering target

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

ADR/RID: 4.1 IMDG: 4.1 IATA: 4.1

### **14.4 Packaging group**

ADR/RID: II IMDG: II IATA: II

### **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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