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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 Boron oxide  
Product number A43644  
Brand 3ASenrise  
CAS number 1303-86-2

#### 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

Reproductive toxicity (Category 1B), H360

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

##### Pictogram



**Signal word: Danger**

##### Hazard statement(s)

H360 May damage fertility or the unborn child.

##### Precautionary statement(s)

##### Prevention

P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.

##### Response

P308+P313 IF exposed or concerned: Get medical advice/attention.

## Storage

P405 Store locked up.

## 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

H360 May damage fertility or the unborn child.

## 2.5 Environmental hazards Code

No data available

## 2.6 Other hazards

No data available

# 3 COMPOSITION/INFORMATION ON INGREDIENTS

## Substance / Mixture: Substance

### 3.1 Substance

Name	Boron oxide
Formula	B <sub>2</sub> O <sub>3</sub>
Molecular Weight	69.62
CAS	1303-86-2
Concentration	99%

# 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 water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

## 5.2 Special hazards arising from the substance or mixture

Borane/boron 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	White powder
b) Odor	odorless
c) pH	5.46 at 25 ° C
d) Melting point/freezing point	450 ° C
e) Initial boiling point and boiling range	1,860 ° C

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	< 0.13 hPa at < 300 ° C
j) Vapor density	No data available
k) Density	2.46 g/mL at 25 ° 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	The product is not flammable.

## **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

– Rat – male – > 2,600 mg/kg

LC50 Inhalation

– Rat – male and female – 4 h – > 2.12 mg/l – dust/mist

LD50 Dermal

– Rabbit – male and female – > 2,000 mg/kg

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

Skin – Rabbit Result: No skin irritation – 24 h Remarks: (boric acid) The value is given in analogy to the following substances: boric acid

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

Eyes – Rabbit Result: No eye irritation – 24 h Remarks: The value is given in analogy to the following substances: boric acid

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

Buehler Test – Guinea pig Result: negative Remarks: The value is given in analogy to the following substances: boric acid

### **11.5 Germ cell mutagenicity**

Test Type: sister chromatid exchange assay Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Result: negative Remarks: (boric acid) The value is given in analogy to the following substances: boric acid

### **11.6 Carcinogenicity**

No data available

### **11.7 Reproductive toxicity**

May damage fertility. May damage the unborn child.

### **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**

Repeated dose toxicity – Rat – male and female – Oral – 2 yr – NOAEL (No observed adverse effect level) – 100 mg/kg – LOAEL (Lowest observed adverse effect level) – 334 mg/kg The value is given in analogy to the following substances: boric acid Cough, Difficulty in breathing 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:

LC50 – Carassius auratus (goldfish) – 570 mg/l – 72 h

Toxicity to daphnia and other aquatic:

No data available

Toxicity to algae:

static test EC50 – Selenastrum capricornutum (green algae) – 52.5 mg/l – 74.5 h

Toxicity to bacteria:

No data available

### **12.2 Persistence and degradability**

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

### **12.3 Bioaccumulative potential**

No data available

### **12.4 Mobility in soil**

No data available

### **12.5 Other adverse effects**

Fertilising effect possible. 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: – IMDG: – IATA: –

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

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA-DGR: Not dangerous goods

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

ADR/RID: – IMDG: – IATA: –

#### **14.4 Packaging group**

ADR/RID: - IMDG: - IATA: -

#### **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

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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