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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 tert-Butyl ethyl ether  
Product number D070071  
Brand 3ASenrise  
CAS number 637-92-3

#### 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.

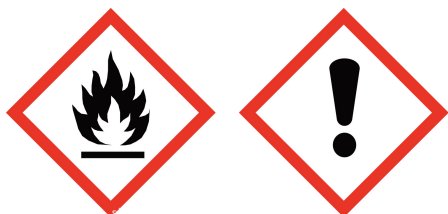
### 2 HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

Flammable liquids (Category 2), H225  
Specific target organ toxicity - single exposure (Category 3), Narcotic effects, H336

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

##### Pictogram



**Signal word: Danger**

##### Hazard statement(s)

H225 Highly Flammable liquid and vapour.  
H336 May cause drowsiness or dizziness.

##### Precautionary statement(s)

##### Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.  
P233 Keep container tightly closed.  
P240 Ground/bond container and receiving equipment.

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

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

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

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

### **Response**

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

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

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

### **Storage**

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

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

### **Disposal**

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

## **2.3 Physical and chemical hazards**

H225 Highly Flammable liquid and vapour.

## **2.4 Health hazards**

H336 May cause drowsiness or dizziness.

## **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	tert-Butyl ethyl ether
Formula	C6H14O
Molecular Weight	102.18
CAS	637-92-3
Concentration	98%

## **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**

Dry powder Dry sand

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

Carbon 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	Colorless liquid
b) Odor	No data available
c) pH	No data available
d) Melting point/freezing point	-97 ° C
e) Initial boiling point and boiling range	72 - 73 ° C
f) Upper/lower flammability or explosive limits	No data available
g) Flash point	-19 ° C - closed cup
h) Evaporation rate	No data available
i) Vapor pressure	207 hPa at 25 ° C
j) Vapor density	No data available
k) Density	0.742 g/cm <sup>3</sup> at 25 ° C
l) Water solubility	14.3 g/l at 25.00 ° C
m) Partition coefficient: n-octanol/water	No data available
n) Autoignition temperature	392 ° C at 1003.40 - 1009.20 hPa
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 oxidizing agents

### **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 - > 2,003 mg/kg

LC50 Inhalation

- Rat - male and female - 4 h - > 5.88 mg/l - vapor

LD50 Dermal

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

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

Skin - Rabbit Result: No skin irritation - 4 h

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

Eyes - Rabbit Result: No eye irritation - 4 h

## 11.4 Respiratory or skin sensitization

Maximization Test – Guinea pig Result: Not a skin sensitizer.

## 11.5 Germ cell mutagenicity

Test Type: Ames test Test system: S. typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without m

## 11.6 Carcinogenicity

No data available

## 11.7 Reproductive toxicity

No data available

## 11.8 Specific target organ toxicity - single exposure

Inhalation – May cause drowsiness or dizziness. – Central nervous system

## 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 – Inhalation – 90 d Remarks: Subchronic toxicity Repeated dose toxicity – Rat – male and female – Oral – 182 d – NOAEL (No observed adverse effect level) – 100 mg/kg Repeated dose toxicity – Rat – male and female – Inhalation – 104 Weeks RTECS: KN4730200 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 – Poecilia reticulata (guppy) – > 974.1 mg/l – 96 h

Toxicity to daphnia and other aquatic:

static test EC50 – Daphnia magna (Water flea) – 110 mg/l – 48 h

Toxicity to algae:

static test NOEC – Pseudokirchneriella subcapitata (green algae) – 7.5 mg/l – 72 h static

test EC50 – Pseudokirchneriella subcapitata (algae) – 1,100 mg/l – 72 h

Toxicity to bacteria:

static test EC50 – Pseudomonas putida – 510 mg/l – 16 h static test NOEC – Pseudomonas putida – 78 mg/l – 16 h

### 12.2 Persistence and degradability

Biodegradability aerobic – Exposure time 14 d Result: 94.16 % – Readily biodegradable.

### 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: 3271 IMDG: 3271 IATA: 3271

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

ADR/RID: ETHERS, N. O. S. (tert-Butyl ethyl ether)

IMDG: ETHERS, N. O. S. (tert-Butyl ethyl ether)

IATA-DGR: Ethers, n. o. s. (tert-Butyl ethyl ether)

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

ADR/RID: 3 IMDG: 3 IATA: 3

### **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

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.

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