**Revision Date 01.01.2025**
**Data of first issue 09.01.2017**

# Material Safety Data Sheet

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

### 1.1 Product identifiers

| | |
|---|---|
| Product name | Propylene oxide |
| Product number | W611032 |
| Brand | 3ASenrise |
| CAS number | 75-56-9 |

### 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 1), H224
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 3), H331
Acute toxicity, Dermal (Category 3), H311
Skin corrosion/irritation (Category 2), H315
Serious eye damage/eye irritation (Category 2A), H319
Germ cell mutagenicity (Category 1B), H340
Carcinogenicity (Category 2), H351
Specific target organ toxicity - single exposure (Category 3), respiratory tract irritation, H335
Short-term (acute) aquatic hazard (Category 3), H402

### 2.2 GHS label elements, including precautionary statements

**Pictogram**

**Signal word: Danger**

**Hazard statement(s)**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H224 Extremely flammable liquid and vapour.

H302 Harmful if swallowed.

H335 May cause respiratory irritation.

H340 May cause genetic defects.

H351 Suspected of causing cancer.

H402 Harmful to aquatic life.

H311+H331 Toxic in contact with skin or if inhaled.

**Precautionary statement(s)**

**Prevention**

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

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

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

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

P264 Wash hands thoroughly after handling.

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

P273 Avoid release to the environment.

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

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

**Response**

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

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.

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

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

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

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

**Storage**

P405 Store locked up.

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

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

**Disposal**

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

**2.3 Physical and chemical hazards**

H224 Extremely flammable liquid and vapour.

**2.4 Health hazards**

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H302 Harmful if swallowed.
H335 May cause respiratory irritation.
H331 Toxic if inhaled.
H340 May cause genetic defects.
H351 Suspected of causing cancer.
H311 Toxic in contact with skin.

### 2.5 Environmental hazards Code

H402 Harmful to aquatic life.

### 2.6 Other hazards

No data available

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

### Substance / Mixture: Substance

### 3.1 Substance

| | |
|---|---|
| Name | Propylene oxide |
| Formula | C3H6O |
| Molecular Weight | 58.08 |
| CAS | 75-56-9 |
| Concentration | 99.9% |

## 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

Carbon dioxide (CO2) Foam Dry powder

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

Carbon oxides Combustible. Pay attention to flashback. Vapors are heavier than air and may spread along floors. Development of hazardous combustion gases or vapours possible in the event of fire. Forms explosive mixtures with air at ambient temperatures.

### 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: 2-8° C

## 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 | sweet, ether-like |
| c) pH | No data available |
| d) Melting point/freezing point | -112 ° C |

| | |
|---|---|
| e) Initial boiling point and boiling range | 34 ° C |
| f) Upper/lower flammability or explosive limits | Upper explosion limit: 36 - 45 %(V) Lower explosion limit: 1.9 %(V) |
| g) Flash point | -38 ° C closed cup |
| h) Evaporation rate | No data available |
| i) Vapor pressure | 2,028.5 hPa at 55 ° C |
| j) Vapor density | 2.01 - (Air = 1.0) |
| k) Density | 0.83 g/mL at 25 ° C |
| l) Water solubility | 425 g/l at 20 ° C |
| m) Partition coefficient: n-octanol/water | No data available |
| n) Autoignition temperature | > 400 ° C at 1,005 - 1,018 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

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 and female - 382 - 587 mg/kg

LC50 Inhalation

- Rat - male and female - 4 h - 9.95 mg/l - vapor

LD50 Dermal

- Rabbit - 950 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: Severe irritations

### 11.4 Respiratory or skin sensitization

Split adjuvant test - Guinea pig Result: negative

### 11.5 Germ cell mutagenicity

May cause genetic defects. Test Type: Ames test Test system: Escherichia coli/Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: positive Test Type: In vitro mammalian cell gene mutat

### 11.6 Carcinogenicity

Presumed to have carcinogenic potential for humans

### 11.7 Reproductive toxicity

No data available

### 11.8 Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation. - Respiratory system

### 11.9 Specific target organ toxicity - repeated exposure

No data available

### 11.10 Aspiration hazard

no data available.

### 11.11 Additional Information

RTECS: TZ2975000 burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, 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:
static test LC50 - Oncorhynchus mykiss (rainbow trout) - 52 mg/l - 96 h
Toxicity to daphnia and other aquatic:
static test EC50 - Daphnia magna (Water flea) - 350 mg/l - 48 h
Toxicity to algae:
static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 240 mg/l - 96 h
Toxicity to bacteria:
No data available

### 12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d Result: 96 % - Readily biodegradable.

### 12.3 Bioaccumulative potential

Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

### 12.4 Mobility in soil

No data available

### 12.5 Other adverse effects

Stability in water - 15.7 yr Remarks: reaction with hydroxyl radicals(calculated) - ca.11 d Remarks: Hydrolysis

## 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: 1280 IMDG: 1280 IATA: 1280

### 14.2 UN proper shipping name

ADR/RID: PROPYLENE OXIDE
IMDG: PROPYLENE OXIDE
IATA-DGR: Propylene oxide

### 14.3 Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

### 14.4 Packaging group

ADR/RID: I IMDG: I IATA: I

### 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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