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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 Ethanolamine
Product number W820089
Brand 3ASenrise
CAS number 141-43-5

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 4), H227
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 4), H332
Acute toxicity, Dermal (Category 4), H312
Skin corrosion/irritation (Category 1B), H314
Serious eye damage/eye irritation (Category 1), H318
Specific target organ toxicity - single exposure (Category 3), respiratory tract irritation, H335
Short-term (acute) aquatic hazard (Category 2), H401 Long-term (chronic) aquatic hazard (Category 3), H412

2.2 GHS label elements, including precautionary statements

Pictogram



Signal word: Danger

Hazard statement(s)

H227 Combustible liquid.

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

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

H401 Toxic to aquatic life.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

Prevention

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

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

P264 Wash hands thoroughly after handling.

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

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

P273 Avoid release to the environment.

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

Response

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

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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

Rinse SKIN with water/shower.

P304+P340+P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Immediately call a POISON CENTER/ doctor.

P305+P351+P338+P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

P362+P364 Take off contaminated clothing and wash it before reuse.

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

H227 Combustible liquid.

2.4 Health hazards

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

2.5 Environmental hazards Code

H401 Toxic to aquatic life.

H412 Harmful 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	Ethanolamine
Formula	C ₂ H ₇ N ₀
Molecular Weight	61.08
CAS	141-43-5
Concentration	99% (NMR)

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

Carbon oxides Nitrogen oxides (NO_x) Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapours possible in the event of fire.

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 to light yellow to light orange liquid or solid
b) Odor	amine-like
c) pH	12.1 at 100 g/l at 20 ° C
d) Melting point/freezing point	10 - 11 ° C
e) Initial boiling point and boiling range	69 - 70 ° C at 13 hPa
f) Upper/lower flammability or explosive limits	Upper explosion limit: 17 %(V) Lower explosion limit: 2.5 %(V)
g) Flash point	91 ° C at ca. 1,013 hPa -closed cup
h) Evaporation rate	No data available
i) Vapor pressure	0.5 hPa at 20 ° C
j) Vapor density	No data available
k) Density	1.012 g/mL at 25 ° C
l) Water solubility	1.000 g/l at 20 ° C - completely miscible
m) Partition coefficient: n-octanol/water	No data available

n) Autoignition temperature	424 ° C at 1,013 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 - 1,089 mg/kg

LC50 Inhalation

No data available

LD50 Dermal

- Rabbit - 1,015 mg/kg

11.2 Skin corrosion/irritation

Skin - Rabbit Result: Corrosive - 4 h

11.3 Serious eye damage/eye irritation

Eyes - Rabbit Result: Corrosive Remarks: Causes serious eye damage.

11.4 Respiratory or skin sensitization

Maximization Test - Guinea pig Result: negative

11.5 Germ cell mutagenicity

Test Type: Ames test Test system: Escherichia coli/Salmonella typhimurium Metabolic

activation: with and without metabolic activation Method: OECD Test Guideline 471 Result:

negative Test Type: Chromosome aberration test in vitro Test system: rat hepatocy

11.6 Carcinogenicity

No data available

11.7 Reproductive toxicity

No data available

11.8 Specific target organ toxicity - single exposure

May cause respiratory irritation.

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 - > 75 Days - NOAEL (No observed

adverse effect level) - 300 mg/kg RTECS: KJ5775000 Liver - Irregularities - Based on Human

Evidence

12 ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish:

semi-static test LC50 - Cyprinus carpio (Carp) - 349 mg/l - 96 h

Toxicity to daphnia and other aquatic:

static test EC50 - Daphnia magna (Water flea) - 65 mg/l - 48 h

Toxicity to algae:

static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 2.8 mg/l - 72 h static

test NOEC - Pseudokirchneriella subcapitata (green algae) - 1 mg/l - 72 h

Toxicity to bacteria:

static test EC10 - activated sludge - > 1,000 mg/l - 30 min

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 21 d Result: > 90 % - Readily biodegradable.

Result: 90 - 100 % - Readily biodegradable. Biochemical Oxygen 800 mg/g Demand (BOD)

Theoretical oxygen 1,310 mg/g demand

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Other adverse effects

Additional ecological Toxic to aquatic life. information

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: 2491 IMDG: 2491 IATA: 2491

14.2 UN proper shipping name

ADR/RID: ETHANOLAM INEorETHANOLAMINESOLUTION

IMDG: ETHANOLAM INEorETHANOLAMINESOLUTION

IATA-DGR: ETHANOLAM INEorETHANOLAMINESOLUTION

14.3 Transport hazard class(es)

ADR/RID: 8 IMDG: 8 IATA: 8

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.

Tel: +86 -400-005-6266 Fax: +86 -0556-5555368 E-mail: Service@3asenrise.com

Add: No.88 Weisan Road, High-Tech Industrial Development Zone, Anqing, Anhui