SAFETY DATA SHEETS

According to the UN GHS revision 8

Version: 1.0
Creation Date: July 15, 2019
Revision Date: July 15, 2019

YATAI CHEMICAL CORP

1. SECTION 1: Identification

1.1. GHS Product identifier

Product name Ethylamine

1.2. Other means of identification

Other names monoethyl amine; Ethylamin; Ethamamine

1.3. Recommended use of the chemical and restrictions on use

Identified uses Food additives -> Flavoring Agents
Uses advised against no data available

1.4. Supplier's details

Company Yatai Chemical Corp
Address Room 20A5, No.585, Longhua West Road, Shanghai, China
Telephone 0086-21-64563115

1.5. Emergency phone number

Emergency phone number 0086-21-64563115
Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

2. SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Gases under pressure: Liquefied gas
Flammable gases, Category 1A, Flammable gas
Eye irritation, Category 2
Specific target organ toxicity – single exposure, Category 3

2.2. GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger
Hazard statement(s) H220 Extremely flammable gasH319 Causes serious eye irritationH335 May cause respiratory irritation

Precautionary statement(s)
Prevention P210 Keep away from heat, hot surfaces, sparks,

	open flames and other ignition sources. No smoking.P264 Wash ... thoroughly after handling.P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...P261 Avoid breathing dust/fume/gas/mist/vapours/spray.P271 Use only outdoors or in a well-ventilated area.
Response	P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.P381 In case of leakage, eliminate all ignition sources.P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.P319 Get medical help if you feel unwell.
Storage	P410+P403 Protect from sunlight. Store in a well-ventilated place.P403 Store in a well-ventilated place.P403+P233 Store in a well-ventilated place. Keep container tightly closed.P405 Store locked up.
Disposal	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3. Other hazards which do not result in classification

no data available

3. SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Ethylamine	Ethylamine	75-04-7	200-834-7	100%

4. SECTION 4: First-aid measures

4.1. Description of necessary first-aid measures

Medical attention is required. Consult a doctor. Show this safety data sheet (SDS) to the doctor in attendance.

If inhaled

Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink. Refer for medical attention .

4.2. Most important symptoms/effects, acute and delayed

Inhalation causes irritation of respiratory tract and lungs; pulmonary edema may result. Liquid causes severe irritation and burns of eyes and skin, and can permanently injure eyes after 15 seconds' contact. Ingestion causes severe burns of mouth and stomach; can be fatal. (USCG, 1999)

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Remove patient from contact with material. Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. /Inorganic Bases/Alkaline Corrosives and Related Compounds/

5. SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2. Specific hazards arising from the chemical

Special Hazards of Combustion Products: Irritating and toxic oxides of nitrogen may be formed. Behavior in Fire: Vapor is heavier than air and may travel a considerable distance to a source of ignition and flash back. Containers may explode when heated. (USCG, 1999)

5.3. Special protective actions for fire-fighters

Use water spray, dry powder, alcohol-resistant foam. In case of fire: keep drums, etc., cool by spraying with water.

6. SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance.

Ventilation. Remove all ignition sources. Cautiously neutralize spilled liquid. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.2. Environmental precautions

Evacuate danger area! Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Ventilation. Remove all ignition sources. NEVER direct water jet on liquid.

6.3. Methods and materials for containment and cleaning up

Accidental release measures: Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.; Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.; Methods and materials for containment and cleaning up: Clean up promptly by sweeping or vacuum.

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7. SECTION 7: Handling and storage

7.1. Precautions for safe handling

NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting.
Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2. Conditions for safe storage, including any incompatibilities

Fireproof. Cool.Conditions for safe storage, including any incompatibilities: Keep container tightly closed in a dry and well-ventilated place. Storage class (TRGS 510): Gases

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8. SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure limit values

TLV: 5 ppm as TWA; 15 ppm as STEL; (skin).MAK: 9.4 mg/m3, 5 ppm; peak limitation category: I(2); pregnancy risk group: D.EU-OEL: 9.4 mg/m3, 5 ppm as TWA

Biological limit values

no data available

8.2. Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.
Skin protection
Protective clothing. Protective gloves.
Respiratory protection
Use ventilation, local exhaust or breathing protection.
Thermal hazards
no data available

9. SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Ethylamine is a colorless liquid or a gas (boiling point 62°F) with an odor of ammonia. Flash point less than 0°F. Density of liquid 5.7 lb / gal. Corrosive to the skin and eyes. Vapors are heavier than air. Produces toxic oxides of nitrogen during combustion. Exposure of the closed container to intense heat may cause it to rupture violently and rocket.
Colour	Colorless gas or water-white liquid (below 62 degrees F) [Shipped as a liquefied compressed gas]
Odour	Ammonia odor
Melting point/freezing point	-46°C(lit.)
Boiling point or initial boiling point and boiling range	16.6°C(lit.)
Flammability	Flammable Gas
Lower and upper explosion limit/flammability limit	Lower flammable limit: 3.5% by volume; Upper flammable limit: 14% by volume
Flash point	-31°C
Auto-ignition temperature	721°F
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	Very soluble (NTP, 1992)
Partition coefficient n-octanol/water	log Kow = -0.13
Vapour pressure	874 mm Hg (20 °C)
Density and/or relative density	0.81g/mLat 20°C
Relative vapour density	1.56 (15 °C, vs air)
Particle characteristics	no data available

10. SECTION 10: Stability and reactivity

10.1. Reactivity

Decomposes on burning. This produces toxic gases including nitrogen oxides. The solution is a strong base. It reacts with acid and is corrosive. Reacts with strong oxidants and organic compounds. This generates fire and explosion hazard. Attacks many non-ferrous metals and plastic.

The substance is a strong base. It reacts violently with acid and is corrosive. Reacts violently with strong oxidants and organic compounds. This generates fire and explosion hazard. Attacks many non-ferrous metals and plastics.

10.2. Chemical stability

Chemical stability: Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

A very dangerous fire hazard when exposed to heat or flame ... can react vigorously with oxidizing materials.The gas is heavier than air and may travel along the ground; distant ignition possible.,The vapour is heavier than air and may travel along the ground; distant ignition possible.Sensitive to heat. Reacts vigorously with oxidizing agents. Incompatible with isocyanates, halogenated organics, peroxides, phenols (acidic), epoxides, anhydrides, and acid halides. Incompatible with cellulose nitrate. Flammable gaseous hydrogen is generated in combination with strong reducing agents, such as hydrides. Also incompatible with oxidizing agents. A chemical base. Neutralizes acids to form salts plus water in an exothermic reaction Dissolves most paints, plastics and rubber (NTP, 1992).

10.4. Conditions to avoid

no data available

10.5. Incompatible materials

Incompatible materials: Strong oxidizing agents, nickel, copper, strong acids, zinc. Ethylamine, anhydrous is packaged in steel cylinders. Cool to 0 deg C before opening. Incompatible with silver, mercury and brass.

10.6. Hazardous decomposition products

When heated to decomposition it emits toxic fumes of nitroxides.

11. SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 530 mg/kg bw
- Inhalation: LC50 Rat inhalation 12.6 mg/L/4 hr
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is severely irritating to the eyes, skin and respiratory tract.

STOT-repeated exposure

no data available

Aspiration hazard

A harmful contamination of the air will be reached very quickly on evaporation of this substance at 20°C.

12. SECTION 12: Ecological information

12.1. Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water flea); Concentration: 250 mg/L for 24 hr /Conditions of bioassay not specified in source examined
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2. Persistence and degradability

AEROBIC: Ethylamine is expected to be degraded by biological sewage treatment with suitable acclimation(1). Activated sludge acclimated to aniline removed 34% of theoretical BOD in 130 hours; the initial ethylamine concentration was 500 mg/L(2). Activated and non-activated sludge cultures were observed to rapidly degrade ethylamine(3,4).

12.3. Bioaccumulative potential

An estimated BCF of 3.2 was calculated in fish for ethylamine(SRC), using a log Kow of -0.13(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

12.4. Mobility in soil

The Koc of ethylamine is estimated as 7(SRC), using a log Kow of -0.13(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that ethylamine is expected to have very high mobility in soil. Adsorption can be affected by the acidity of the soil; at a higher pH, cations have higher adsorption(SRC). The pKa of ethylamine is 10.87(4), indicating that this compound will exist almost entirely in the cation form in the environment and cations generally adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(5).

12.5. Other adverse effects

no data available

13. SECTION 13: Disposal considerations

13.1. Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14. SECTION 14: Transport information

14.1. UN Number

ADR/RID: UN1036 (For reference only, please check.)	IMDG: UN1036 (For reference only, please check.)	IATA: UN1036 (For reference only, please check.)

14.2. UN Proper Shipping Name

ADR/RID: ETHYLAMINE (For reference only, please check.)	IMDG: ETHYLAMINE (For reference only, please check.)	IATA: ETHYLAMINE (For reference only, please check.)

14.3. Transport hazard class(es)

ADR/RID: 2.1 (For reference only, please check.)	IMDG: 2.1 (For reference only, please check.)	IATA: 2.1 (For reference only, please check.)

14.4. Packing group, if applicable

ADR/RID: (For reference only, please check.)	IMDG: (For reference only, please check.)	IATA: (For reference only, please check.)

14.5. Environmental hazards

ADR/RID: No	IMDG: No	IATA: No

14.6. Special precautions for user

no data available

14.7. Transport in bulk according to IMO instruments

no data available

15. SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Ethylamine	Ethylamine	75-04-7	200-834-7
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

16. SECTION 16: Other information

Information on revision

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Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

● ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg
● Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp
● ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

See ICSC 0153 Ethylamine, gas in a cylinder.All physical properties are for 70% solution.

Any questions regarding this SDS, Please send your inquiry to ydcl@yataichemical.com

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