



MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT CODE	H0100
PRODUCT NAME	TETRAHYDRO PYRROLE
SUPPLIER	Shanghai M & U International Trade Co., Ltd. Rm 1717, No 598 North NuJiang Road 200333 Shanghai, China +86-21-32515501 32515502 sales@mu-intel.com

FOR EMERGENCIES CALL CHEMTREC: 800-424-9300 (24-HOURS)

2. HAZARD IDENTIFICATION:

Emergency Overview

OSHA Hazards

Flammable liquid, Toxic by ingestion, Corrosive

Other hazards which do not result in classification

Lachrymator

GHS Classification

Flammable liquids (Category 2)

Acute toxicity, Inhalation (Category 4)

Acute toxicity, Oral (Category 4)

Skin corrosion (Category 1A)

Serious eye damage (Category 1)

Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H225 Highly flammable liquid and vapor.

H302, H332 Harmful if swallowed or if inhaled

H314 Causes severe skin burns and eye damage

H402 Harmful to aquatic life.

Precautionary statement(s)

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

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

P305, P351, P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor physician.

HMIS Classification

Health hazard 2
Flammability 3
Physical hazards 2

NFPA Rating

Health hazard 2
Fire 3
Reactivity Hazard 0

Potential Health Effects

Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin May be harmful if absorbed through skin. Cause skin irritation
Eyes Cause eye burns. Causes severe eye burns
Ingestion Toxic if swallowed

3. COMPOSITION AND INFORMATION ON INGREDIENTS:

Synonym Pyrrolidine
Tetramethyleneimine
Formula C₄ H₉ N
Molecular Weight 71.12 g/mol

CAS-No	EC-No	Index-No.	Concentration
123-75-1	204-648-7		

4. FIRST-AID GUIDE:**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. 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. Continue rinsing eyes during transport to hospital.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING GUIDE:**Suitable extinguishing media**

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NO_x)

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE GUIDE:

Personal precautions

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. Discharge into the environment must be avoided.

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

7. HANDLING AND STORAGE:

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge.

Conditions for safe storage

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Handle and store under inert gas.

8. EXPOSURE AND PERSONAL PROTECTION:

Contains no substances with occupational exposure limit values.

Personal protective equipment:

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand 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. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES:**Appearance**

Form LIQUID
Color COLORLESS TO PALE YELLOW

Safety data

Melting point (°C)	no data available
Boiling point (°C)	86
Flash point (°F) Closed cup	37
Vapor pressure (mmHg@20°C)	49
Density @25 °C	0.852
Water solubility	INSOLUBLE
Relative vapor density	2.450
Odor	CHARACTERISTIC

10. STABILITY AND REACTIVITY:**Chemical stability**

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapors may form explosive mixture with air.

Conditions to avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight.

Materials to avoid

Acid chlorides, Acid anhydrides, Strong oxidizing agents, Carbon dioxide (CO₂), Acids

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NO_x)

11. TOXICOLOGICAL INFORMATION:

Acute toxicity

Oral LD50 - rat - 433 mg/kg

Inhalation LC50 - rat - 4 h - 11.7 mg/l

Carcinogenicity

IARC:

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH:

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP:

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA:

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Potential health effects

Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion Toxic if swallowed.

Skin May be harmful if absorbed through skin Cause skin irritation.

Eyes Causes eye burns. Causes severe eye burns

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin, Cough, Shortness of breath, Headache, Nausea

Additional Information

RTECS: UX9650000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish LC50 - Danio rerio (zebra fish) - 100 - 220 mg/l - 96 h

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. DISPOSAL RECOMMENDATIONS:

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.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORTATION INFORMATION:

DOT (US)

UN number: 1922 Class: 3 (8) Packing group: II
Proper shipping name: Tetrahydro pyrrole

IMDG

UN number: 1922 Class: 3 (8) Packing group: II EMS-No: F-E, S-C
Proper shipping name: TETRAHYDRO PYRROLE

IATA

UN number: 1922 Class: 3 (8) Packing group: II
Proper shipping name: Tetrahydro pyrrole

15. REGULATORY INFORMATION:

OSHA Hazards

Flammable liquid, Toxic by ingestion, Corrosive

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components

Tetrahydro pyrrole CAS-No. 123-75-1

Pennsylvania Right To Know Components

Tetrahydro pyrrole CAS-No. 123-75-1

New Jersey Right To Know Components

Tetrahydro pyrrole CAS-No. 123-75-1

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION:

The information in this MSDS was obtained from current and reliable sources. However, the data is provided without any warranty, expressed or implied, regarding its correctness or accuracy. Since the conditions for use, handling, storage and disposal of this product are beyond M&U's control, it is the responsibility of the user both to determine safe conditions for use of this product and to assume liability for loss, damage, or expense arising out of the products improper use. No warranty expressed or implied regarding the product described herein will be created by or inferred from any statement or omission in the MSDS. Various federal, state, or provincial agencies may have specific regulations concerning the transportation, handling, storage, use, or disposal of this product which may not be reflected in the MSDS. The user should review these regulations to ensure full compliance.

Material Safety Data Sheet prepared by: **M & U International LLC**