



MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION:

| | |
|---------------------|--|
| PRODUCT CODE | N0084 |
| PRODUCT NAME | NAT. ISOVALERIC ACID |
| 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

Combustible Liquid, Corrosive.

GHS Classification

Flammable liquids (Category 4)

Acute toxicity, Oral (Category 5)

Acute toxicity, Dermal (Category 5)

Skin corrosion (Category 1B)

Serious eye damage (Category 1)

GHS Label elements, including precautionary statements

Pictogram none

Signal word Danger

Hazard statement(s)

H227 Combustible liquid.

H303 313 May be harmful if swallowed or in contact with skin.

H314 Causes severe skin burns and eye damage.

Precautionary statement(s)

P280 Call a POISON CENTER or a doctor/ physician.

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 1

Physical hazards 1

NFPA Rating

Health hazard 2

Fire 1
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. Causes skin burns.
Eyes Causes eye burns.
Ingestion May be harmful if swallowed.

3. COMPOSITION AND INFORMATION ON INGREDIENTS:

Formula C5 H10 O2
Molecular Weight 102.14 g/mol

| CAS-No | EC-No | Index-No. | Concentration |
|----------|-----------|-----------|---------------|
| 503-74-2 | 207-975-3 | | |

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 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:

Conditions of flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide..

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

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.

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 (see section 12). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE:**Precautions for safe handling**

Avoid inhalation of vapor or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge.

Conditions for safe storage

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.

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

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance

Form LIQUID
Color COLORLESS TO PALE YELLOW

Safety data

pH no data available
Melting point (°C) -35
Boiling point (°C) 175
Flash point (°F) Closed cup >200
Vapor pressure (mmHg @20 °C) no data available
Density @25 °C 0.920
Water solubility SOLUBLE
Relative vapor density no data available
Odor CHEESE-LIKE, RANCID

10. STABILITY AND REACTIVITY:

Chemical stability

Stable under recommended storage conditions.

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Bases, Oxidizing agents, Reducing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION:

Acute toxicity

Oral LD50

LD50 Oral - rat - >2,000 mg/kg

Dermal LD50

LD50 Dermal - rabbit - 3,560 mg/kg

Other information on acute toxicity

LD50 Intravenous - mouse - 1,120 mg/kg

Skin corrosion/irritation

Skin - rabbit - Open irritation test

Remarks: Moderate skin irritation

Serious eye damage/eye irritation

Eyes - rabbit

Remarks: Mild eye irritation

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. May cause respiratory tract irritation.

Ingestion May be harmful if swallowed.

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

Eyes Causes eye irritation.

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Inhalation may provoke the following symptoms: spasm, inflammation and edema of the bronchi, spasm, inflammation, and edema of the larynx, pneumonitis, pulmonary edema, Symptoms and signs of poisoning are:, burning sensation, Cough wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting.

Additional Information

RTECS: NY1400000

12. DISPOSAL RECOMMENDATIONS:

Product

This combustible material may be burned in a chemical incinerator equipped with and afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

13. TRANSPORTATION INFORMATION:

DOT (US)

UN number: 1760 Class: 8 Packing group: III

Proper shipping name: Corrosive liquid, n.o.s.

IMDG

UN number: 1760 Class: 8 Packing group: III

Proper shipping name: Corrosive liquid, n.o.s.

IATA

UN number: 1760 Class: 8 Packing group: III

Proper shipping name: Corrosive liquid, n.o.s.

14. REGULATORY INFORMATION:

OSHA Hazards

Combustible Liquid, 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

| | CAS-No. | Revision Date |
|-----------------|----------|---------------|
| Isovaleric acid | 503-74-2 | 1993-4-24 |

Pennsylvania Right To Know Components

| | CAS-No. | Revision Date |
|-----------------|----------|---------------|
| Isovaleric acid | 503-74-2 | 1993-4-24 |

New Jersey Right To Know Components

| | CAS-No. | Revision Date |
|-----------------|----------|---------------|
| Isovaleric acid | 503-74-2 | 1993-4-24 |

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.

15. 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.