

Material Safety Data Sheet (MSDS)

4-Methylmorpholine

Prepared by Tuoda Industry Limited

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1. Identification

Product Name:	4-Methylmorpholine
CAS No.:	109-02-4
EINECS/ELINCS No.:	203-639-5
Recommended Use:	Intermediate for pharmaceuticals, agrochemicals, and organic synthesis.
Uses Advised Against:	Food, drug, pesticide, or biocidal product use.
Supplier:	Tuoda Industry Limited
Emergency Telephone (24H):	+86 13589106478 (WhatsApp)

2. Hazard(s) Identification

Classification (GHS/OSHA 29 CFR 1910.1200):

- Flammable liquids (Category 3)
- Acute toxicity, inhalation (Category 4)
- Acute toxicity, dermal (Category 4)
- Skin corrosion/irritation (Category 2)
- Serious eye damage/eye irritation (Category 2A)

Signal Word: Warning

Hazard Statements:

- Flammable liquid and vapor.
- Harmful if inhaled or in contact with skin.
- Causes skin irritation.
- Causes serious eye irritation.

3. Composition/Information on Ingredients

4-Methylmorpholine

CAS No.: 109-02-4

4. First-aid Measures

Inhalation: Remove person to fresh air. Administer oxygen if breathing is difficult. Seek medical attention.

Skin Contact: Remove contaminated clothing. Wash skin with soap and water.

Eye Contact: Rinse cautiously with water for several minutes. Seek immediate medical attention.

Ingestion: Rinse mouth. Do NOT induce vomiting. Seek immediate medical attention.

5. Fire-fighting Measures

Suitable Extinguishing Media: Dry chemical, CO₂, alcohol-resistant foam.

Specific Hazards: Flammable vapors may form explosive mixtures with air.

Protective Equipment: Wear self-contained breathing apparatus and full protective gear.

6. Accidental Release Measures

Personal Precautions: Evacuate personnel to safe areas. Remove ignition sources. Ventilate area.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for Cleanup: Absorb with inert material and place into appropriate container for disposal.

7. Handling and Storage

Handling: Handle under well-ventilated conditions. Avoid inhalation of vapor or mist.

Storage: Store in tightly closed containers in a cool, dry, and well-ventilated area.

8. Exposure Controls / Personal Protection

Engineering Controls: Adequate local exhaust ventilation.

Personal Protective Equipment:

- Eyes: Safety goggles (EN166)
- Skin: Protective gloves and protective clothing
- Respiratory: Use approved respirators if exposure limits are exceeded.

9. Physical and Chemical Properties

Appearance	Colorless liquid
Odor	Amine-like odor
Density at 20°C	0.914 g/cm ³
Melting Point	-66°C
Boiling Point	115-116°C
Flash Point	23°C (closed cup)
Solubility	Miscible with water and most organic solvents

10. Stability and Reactivity

Reactivity: Stable under recommended handling and storage conditions.

Stability: Stable under normal temperatures and pressures.

Incompatible Materials: Strong oxidizing agents, acids.

Decomposition Products: Carbon oxides, nitrogen oxides.

11. Toxicological Information

Acute Toxicity: Harmful if inhaled or absorbed through skin.

Inhalation: May cause respiratory irritation.

Skin Contact: Causes skin irritation.

Eye Contact: Causes serious eye irritation.

Ingestion: Harmful if swallowed.

Carcinogenicity: Not classified.

STOT: May cause respiratory tract irritation.

12. Ecological Information

Ecotoxicity: May cause adverse effects in aquatic environments.

Persistence: Readily biodegradable.

Bioaccumulation: Not expected.

13. Disposal Considerations

Dispose of contents/container in accordance with local/regional/national/international regulations.

14. Transport Information

UN Number	UN1993
Proper Shipping Name	Flammable liquid, n.o.s. (4-Methylmorpholine)
Hazard Class	3 (Flammable Liquid)
Packing Group	III

15. Regulatory Information

TSCA (US): Listed
EINECS (EU): Listed
REACH: Use restricted.

16. Other Information

Prepared By: Safety & Compliance Department, Tuoda Industry Limited
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Disclaimer: The information herein is accurate to the best of our knowledge. It is provided for safety guidance and does not constitute a warranty.