



SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

Product name: 4-Isobutylmorpholine
Product code: I0254
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Revision number: 1

2. HAZARDS IDENTIFICATION

Classification of the GHS

PHYSICAL HAZARDS

Flammable liquids Category 3

HEALTH HAZARDS

Skin corrosion/irritation Category 2

Serious eye damage/eye irritation Category 2A

ENVIRONMENTAL HAZARDS

Not classified

GHS label elements

Pictograms or hazard symbols



Signal word

Warning

Hazard statement

Flammable liquid and vapour
 Causes skin irritation
 Causes serious eye irritation

Precautionary statements

[Prevention]

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 Keep container tightly closed.
 Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against ignition by the static discharge and the spark.
 Wash hands thoroughly after handling.

[Response]

Wear protective gloves/eye protection/face protection.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 If eye irritation persists: Get medical advice/attention.
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

[Storage]

If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.

[Disposal]

Store in a well-ventilated place. Keep cool.
Dispose of contents/container through a waste management company authorized by the local government

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/mixture: Substance

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component(s):	4-Isobutylmorpholine
Percent:	>98.0%(GC)
CAS Number:	10315-98-7
Chemical Formula:	C ₈ H ₁₇ NO

4. FIRST AID MEASURES

Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
Skin contact:	Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.
Eye contact:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion:	Get medical advice/attention if you feel unwell. Rinse mouth.
Protection of first-aiders:	A rescuer should wear personal protective equipment, such as rubber gloves and air-tight goggles.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:	Dry chemical, foam, carbon dioxide.
Extinguishing media not to be used:	Water (It may scatter and spread fire.)
Specific hazards:	Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume.
Specific methods:	Fire-extinguishing work is done from the windward and the suitable fire-extinguishing method according to the surrounding situation is used. Uninvolved persons should evacuate to a safe place. In case of fire in the surroundings: Keep containers cool by spraying with water. Eliminate all ignition sources if safe to do so.
Special protective equipment for firefighters:	When extinguishing fire, be sure to wear personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.
Environmental precautions:	Prevent product from entering drains.
Methods and materials for containment and cleaning up:	Absorb spilled material in dry sand or inert absorbent before recovering it into an airtight container. In case of large amount of spillage, contain a spill by bunding. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
Prevention of secondary hazards:	Remove all sources of ignition. Fire-extinguishing devices should be prepared in case of a fire. Use spark-proof tools and explosion-proof equipment.

7. HANDLING AND STORAGE

Handling

Technical measures:	Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent generation of vapor or mist. Keep away from heat/sparks/open flame/hot surfaces. -No smoking. Take measures to prevent the build up of electrostatic charge. Use explosion-proof equipment. Wash hands and face thoroughly after handling. Use a closed system if possible. Use a ventilation, local exhaust if vapor or aerosol will be generated.
Advice on safe handling:	Avoid contact with skin, eyes and clothing.

Storage

Storage conditions:	Keep container tightly closed. Store in a cool, dark and well-ventilated place. Store away from incompatible materials such as oxidizing agents.
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7. HANDLING AND STORAGE

Packaging material: Law is followed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls: Install a closed system or local exhaust. Also install safety shower and eye bath.

Personal protective equipment

Respiratory protection: Vapor respirator. Follow local and national regulations.

Hand protection: Protective gloves.

Eye protection: Safety glasses. A face-shield, if the situation requires.

Skin and body protection: Protective clothing. Protective boots, if the situation requires.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state (20°C): Liquid

Form: clear

Color: Colorless - Slightly pale yellow

Odor: No data available

pH: No data available

Melting point/freezing point: No data available

Boiling Point/Range: 167 °C

Flash Point: 47°C

Explosive limits

Lower: No data available

Upper: No data available

Density: 0.89

Solubility: No data available

Autoignition Temperature: 196°C

10. STABILITY AND REACTIVITY

Stability: Stable under proper conditions.

Reactivity: No special reactivity has been reported.

Incompatible materials: oxidizing agents

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides (NOx)

11. TOXICOLOGICAL INFORMATION

Acute Toxicity: No data available

Skin corrosion/irritation: No data available

Serious eye damage/irritation: No data available

Germ cell mutagenicity: No data available

Carcinogenicity:

IARC = No data available

NTP = No data available

Reproductive toxicity: No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Fish: 48h LC50:64.2 mg/L (Oryzias latipes)

Crustacea: No data available

Algae: No data available

Persistence / degradability: 0 % (by BOD), 0 % (by TOC), 0 % (by GC)

Bioaccumulative potential(BCF): 1.3 - 2.3 (conc. 500 ug/L), <1.0 (conc. 50 ug/L)

Mobility in soil

log Pow: No data available

Soil adsorption (Koc): No data available

12. ECOLOGICAL INFORMATION

Henry's Law constant(PaM³/mol): No data available

13. DISPOSAL CONSIDERATIONS

Recycle to process, if possible. Consult your local regional authorities. You may be able to burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

14. TRANSPORT INFORMATION

Hazards Class: 3: Flammable liquid.
UN-No: 1993
Proper shipping name: Flammable liquid, n.o.s.
Packing group: III

15. REGULATORY INFORMATION

Safe management ordinance of dangerous chemical product (State Council announces on January 26, 2002): Safe use and production, the storage of a dangerous chemical, transport, loading and unloading were prescribed.

16. OTHER INFORMATION

The reference company name of written contents

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