

MORPHOLINE TDS

Chemical name: Morpholine

English nickname: 1-oxa-4-azacyclohexane

CAS Number: 110-91-8

Chemical Formula: C₄H₉NO

Molecular Weight: 87.12

Purity: ≥99.5%

UN Number: 2054

Danger class: 8+3

Characters:

Appearance and properties: Clear colorless transparent liquid. It smells special ammonia.

Density: 1.0 (20°C) ;

Melting point: -5°C ;

Boiling point: 129°C ;

Flammable temperature: 310°C ;

Flash point: 31°C ;

Solubility: miscible with water, soluble in most organic solvents.

Heat of combustion (kJ/mol): no data available

Critical temperature (°C): 346

Critical pressure (MPa): No data available

Hazardous characteristics:

Dangerous properties: Flammable. Exposure to fire may produce harmful flammable gases or vapors. Explosive hazard when mixed with air at a certain concentration.

Health hazard: Harmful by inhalation. Bad for skin. Burns.

Environmental hazards: No data available

Flammability hazard: flammable

Operation, disposal and storage:

Operation precautions: closed operation, local exhaust. Operators must be specially trained and strictly abide by the operating procedures. It is recommended that the operator wear self-priming filter gas mask (full cover), wear anti-gas penetrant work clothes and rubber oil-resistant gloves. Keep away from fire and heat source. No smoking in workplace. Use explosion-proof ventilation systems and equipment. Prevent steam leakage into the workplace air. Avoid contact with oxidants and acids. Control the flow rate to prevent static electricity accumulation. Handling should be carried lightly to prevent damage to packaging and containers. Equipped with the corresponding variety and quantity of fire fighting equipment and leakage emergency treatment equipment. Empty containers may contain hazardous materials.

Storage precautions: Store in a cool and ventilated warehouse. Keep away from fire and heat source. The storage temperature should not exceed 30°C. Keep container sealed. Should be stored separately with oxidizer, acid, etc., do not mix storage. Do not store in large quantities or for long periods.

Explosion-proof lighting and ventilation facilities are adopted. Do not use mechanical equipment and tools that may cause sparks. The storage area shall be equipped with leakage emergency treatment equipment and suitable storage materials.

Transportation matters needing attention:

Transportation vehicles should be equipped with the corresponding variety and quantity of fire fighting equipment and leakage emergency treatment

equipment. The exhaust pipe of the vehicle carrying this product shall be equipped with fire retardant device. During transportation, ensure that containers do not leak, collapse, fall, or damage. It is strictly forbidden to mix and transport with oxidizer. During transportation, it should be protected from sun exposure, rain and high temperature. Stay away from fire and heat source during stopover. Vehicles should be thoroughly cleaned after transportation. Slip away should be forbidden in railway transportation.

Applications:

Morpholine are mainly used to manufacture rubber accelerant (such as NOBS, OTOS and MDS), sulfuration agent (like DT-DM), cleanser, descaling agent, antirust, anti-scorching agent, antiseptic, surfactant, textile printing & dyeing agent, optical bleaching agent, chemical plating bath, antioxidant, hydrolyzing agent, initiator, developer, fruit preserving agent, deodorizer, brightener and organic solvents. Its applications are very wide. Its application in such fields as medicine, pesticide, animal medicine, petroleum and extraction of coke aromatic hydrocarbon have been ceaselessly developed and carried out. In foreign countries, a great deal of morpholine is used for antirust, descaling and metal cleaning, especially for antirust and anticorrosive in high temperature conditions. In boiler maintenance fields, amount of morpholine is also used as descaling agent. Owing to its unique chemical characters, morpholine has become one of the most important fine petroleum chemical products and its applications are very wide.