

Chemical Safety Technical Data Sheet

Product Name:N-Methylpyrrolidone
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Developed in accordance with GB/T 16483 and GB/T 17519
SDS Number: ZLJL-947
Edition : D

Part 1: Identification of Chemicals and Enterprises

Chinese name of the chemical:N-methylpyrrolidone
Chemical name in English:N-methylpyrrolidone

Molecular formula:C₅H₉NO **Relative molecular mass:**99.13
Structure:

Recommended and restricted uses of the chemical:Widely used in the synthesis of polar solvents and polymers; not suitable for pharmaceuticals, food products, household applications, or other purposes.

Part II Overview of Hazards

Emergency Summary:Causes skin irritation. Causes severe eye irritation. May harm fertility or the fetus. Can cause respiratory tract irritation.**GHS Hazard Classification:**

Skin corrosion/irritation:Category 2

Severe ocular injury/irritation:
Category 2A **Reproductive toxicity:**Category 1B

Specific target organ toxicity – single exposure:Category 3 (respiratory irritation)

Tag Elements:
figurative graph :



Warning phrase:Hazard

Hazard Description:Causes skin irritation. Causes severe eye irritation. May harm fertility or the fetus. Can cause respiratory tract irritation.

Protection Explanation:

【 preventive measure 】

- Avoid inhalation; operate only outdoors or in a well-ventilated area.
- Avoid contact with eyes and skin; thoroughly wash the exposed areas after handling.
- Wear protective gloves, protective clothing, protective goggles, and a face shield.
- No eating, drinking, or smoking is permitted in the workplace.

[Accident Response]

- For inhalation: If dyspnea occurs, move the patient to an area with fresh air, have them rest, and maintain a position that facilitates breathing. Seek medical attention if exposure is suspected or if concern arises.
- Skin contact: Immediately remove all contaminated clothing. Wash the affected area thoroughly with ample soap and water. Seek medical attention if discomfort occurs. Contaminated clothing must be washed before reuse.
- Eye contact: Rinse carefully with water for several minutes. If contact lenses are worn and can be easily removed, remove them and continue rinsing. Seek medical attention if exposure occurs or if concern arises.
- Administration: Rinse the mouth; do not induce vomiting. Seek medical attention if exposure occurs or if concern arises.

【 safe storage 】

- Store in a well-ventilated area. Keep the container sealed. Lock it securely during storage.

[Disposal of Waste]

·This product, its contents, and the container shall be disposed of in accordance with national and local regulations.

Physical and chemical hazards:No data available.

Health hazards:Causes skin irritation; causes severe eye irritation; may harm fertility or the fetus; may induce respiratory tract irritation.

Environmental hazards:No data available.

Part III: Composition/Composition Information

√matter		Mixture
Component	Concentration	CAS No.
N-methylpyrrolidone	≥99 0%	872-50-4

Part IV Emergency Management Measures

Inhalation:Immediately remove the individual from the area to fresh air. Keep the airway clear. If breathing is difficult, administer oxygen. In case of respiratory or cardiac arrest, perform cardiopulmonary resuscitation (CPR) immediately. Seek medical attention.

Skin contact:Immediately remove contaminated clothing and rinse thoroughly with running water. Seek medical attention.

Eye contact:Immediately open the eyelids and rinse thoroughly with running water or saline solution. Seek medical attention.

Ingestion:Rinse mouth and drink water. Seek medical attention.

Advice for rescuers:Use personal protective equipment as needed.

Special note for physicians:Provide symptomatic treatment.

Part V Fire Safety Measures

Fire extinguishing agents:Use water mist, foam, dry powder, carbon dioxide, or sand to extinguish fires.

Special risk:No data available.

Fire suppression precautions and protective measures:Firefighters must wear respirators and full-body fire-resistant/anti-toxic clothing, and approach the fire from upwind. Move containers to an open area whenever possible. Spray water to keep containers cool until the fire is fully extinguished. Evacuate immediately if the container suddenly emits abnormal sounds or exhibits unusual behavior.

Part VI: Emergency Response to Leaks

Protective measures, protective equipment, and emergency response procedures for personnel:Isolate the contaminated leakage area and restrict access. Establish a containment zone based on the affected areas of liquid flow and vapor dispersion; unauthorized personnel should evacuate from downwind or upwind directions to a safe area. Emergency responders are advised to wear positive-pressure self-contained breathing apparatus, protective clothing, and oil-resistant rubber gloves. Do not handle ruptured containers or leaked materials before wearing appropriate protective gear. Efforts should be made to contain the leakage source whenever possible.

Environmental protection measures:Prevent leaks from entering water bodies, sewers, basements, or confined spaces.

Methods for containment and removal of leaked chemicals, as well as the disposal materials used:

Minor leakage: Absorb or cover with dry sand or other non-flammable materials, and collect in a container.

Massive leakage: Construct a dike or excavate a pit for containment. Transfer the liquid using an explosion-proof pump to a tank truck or dedicated collector.

Part VII: Handling, Storage and Disposal

Operating Precautions:Perform operations in a sealed environment with local exhaust ventilation. Operators must receive specialized training and strictly adhere to operating procedures. It is recommended that operators wear a hooded electric air-supplied filtering respirator, a full-body protective suit, and rubber gloves. Prevent steam leakage into the workplace. Handle containers gently during transportation to avoid damage to packaging or containers. Equip with emergency leak response equipment. Empty containers may still contain hazardous residues.

Storage Precautions:Store in a dedicated, well-ventilated warehouse. Keep sealed. Store separately from food-grade chemicals; avoid mixing. The storage area should be equipped with appropriate materials to contain spills.

Part VIII Contact Control/Personal Protection

Occupational exposure limit:No data available.

Biological contact limit:No data available.

Monitoring method:No data available.

Process Control:Hermetically sealed operation with local exhaust ventilation. Safety shower and eye-wash facilities provided.

Personal Protective Equipment:

Respiratory protection:When air concentration exceeds safe limits, wear a filtered respirator (half mask). During emergency rescue or evacuation, use an air respirator.

Eye protection:Wear chemical safety goggles.

Skin and body protection:Wear protective clothing resistant to toxic substance penetration.

Hand protection:Wear rubber oil-resistant gloves.

Part Nine Physical and Chemical Properties

Appearance and characteristics:A colorless or pale yellow liquid with a slight ammonia odor.

pH value:No data **Boiling point (°C):**202 **Relative vapor density (air = 1):**No data **Heat of combustion (kJ/mol):**No data

Critical pressure (MPa):No data **Flash point (°C):**No data **Lower explosive limit (%):**No data **Decomposition temperature (°C):**No data

Dissolution:Compatible with water and various organic solvents.

Melting point (°C): -24

Relative density (water = 1): ρ (20) = 1.028–1.035 g/mL **Saturation vapor pressure (kPa):**No data available

Critical temperature (°C):No data

Octanol/water partition coefficient:No data

Self-ignition temperature (°C):No data

Explosion Limit (%):No data

Viscosity (mPa·s):No data

Part 10 Stability and Reactivity

Stability:Stable.

Adverse reactions:No data available.

Conditions for avoiding contact:No information available.

Contraindications:No information available.

Hazardous decomposition products:No data available.

Part XI Toxicological Information

Acute toxicity:No data available.

Skin irritation or corrosion: non-avaible .

Eye irritation or corrosion: non-avaible .

Respiratory or skin allergy: non-avaible .

Mutability of germ cells: non-avaible .

Carcinogenicity:No data available.

Reproductive toxicity:No data available.

Specific target organ system toxicity – single exposure:No data available.

Specific target organ system toxicity – repeated exposure:No data available.

Inhalation hazards:No data available.

Part XII Ecological Information

Ecotoxicity:No Data Available.

Durability and Degradability:

Biodegradability: No data available.

Non-biodegradability: No data available.

Potential bioaccumulation:No data available.

Mobility in soil:No data available.

Part XIII Disposal of waste chemicals

Remaining and non-recyclable products shall be disposed of by licensed companies.

Contaminated packaging:Return the container to the manufacturer or dispose of it in accordance with national and local regulations.

Disposal precautions:Refer to relevant national and local regulations before disposal.

Part XIV Transport Information

United Nations Dangerous Goods Number (UN Number):No information available

United Nations Transport Name:No information available

UN hazard class:No information

Packaging Category:No information

Packaging Logo:No information

Marine pollutants:No

Transportation Precautions:Before transportation, verify that the packaging container is intact and sealed. During transit, ensure the container remains leak-proof, stable, protected from collapse or damage. Strictly prohibit mixing with food or food additives. Transport vehicles must be equipped with appropriate types and quantities of firefighting equipment and leakage emergency response devices. Protect the containers from direct sunlight, rain, and high temperatures during transport. For road transport, follow designated routes as required.

Part 15: Regulatory Information

The following laws, regulations, rules, and standards contain corresponding provisions for the management of this chemical substance.

Law of the People's Republic of China on the Prevention and Treatment of Occupational Diseases:Classification and catalog of occupational diseases: Not listed.

Regulations on the Safety Management of Hazardous Chemicals:List of hazardous chemicals: Not included. List of explosive-prone hazardous chemicals: Not included. List of key hazardous chemicals under supervision: Not included. GB18218-2018 "Identification of Major Hazard Sources for Hazardous Chemicals" (Table 1): Not included.

Regulations on Labor Protection in Workplaces Where Toxic Substances Are Used:List of highly toxic substances: Not included.

Regulations on the Management of Chemicals Susceptible to Drug Manufacturing:Classification and list of types of chemicals susceptible to drug manufacturing: Not included.

International Conventions:Stockholm Convention: Not included; Rotterdam Convention: Not included; Montreal Protocol: Not included.

Part 16: Other Information

Writing and Revision Information:

Changes in this version:Compared to the previous version, new sections on molecular formulas, relative molecular masses, and structural formulas have been added; corresponding content has been incorporated in accordance with the "Comprehensive Book of Safety Technology for Hazardous Chemicals"; and the order of certain sections has been adjusted.

Revision notes:Updated every 5 years or when new relevant national laws and regulations are enacted.

References:Safety Culture Network

Disclaimer:The information in this SDS applies solely to the specified product. Unless otherwise stated, it does not apply to mixtures of this product with other substances. This SDS provides safety information only for properly trained users of the product. Users must independently assess the suitability of this SDS under specific usage conditions. The authors of this SDS shall not be liable for any injuries resulting from its use in exceptional circumstances.