

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Product name : 1-Methyl-2-pyrrolidone
CAS No. : 872-50-4

Manufacturer or supplier's details

Company : Heynova (Shanghai) New Material Technology CO., Ltd
Address : Building 3, No. 690 Bibo Road, Pudong New Area, Shanghai, China
Telephone : +86-178-2110-2608
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2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance : liquid
Color : colorless - yellow

Combustible liquid. May be harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness. May damage fertility or the unborn child. May cause damage to organs (Liver, Bone marrow, Nervous system, Lungs) through prolonged or repeated exposure.

GHS Classification

Flammable liquids : Category 4
Acute toxicity (Oral) : Category 5
Skin corrosion/irritation : Category 2
Serious eye damage/eye irritation : Category 2A
Reproductive toxicity : Category 1B
Specific target organ toxicity - single exposure : Category 3 (respiratory tract irritation, Narcotic effects)
Specific target organ toxicity - repeated exposure : Category 2 (Liver, Bone marrow, Nervous system, Lungs)

GHS label elements

Hazard pictograms :



Signal Word :

Danger

Hazard Statements :

H227 Combustible liquid.
H303 May be harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.

H360 May damage fertility or the unborn child.
H373 May cause damage to organs (Liver, Bone marrow, Nervous system, Lungs) through prolonged or repeated exposure.

Precautionary Statements**: Prevention:**

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P260 Do not breathe mist or vapors.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER/ doctor if you feel unwell.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Physical and chemical hazards

Combustible liquid.

Health hazards

May be harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May damage fertility or the unborn child. May cause respiratory irritation. May cause drowsiness or dizziness. May cause damage to organs through prolonged or repeated exposure.

Environmental hazards

Not classified based on available information.

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Components

Chemical name	CAS RN	Concentration (% w/w)
1-Methyl-2-pyrrolidone	872-50-4	>= 99 -<= 100

4. FIRST AID MEASURES

If inhaled : Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER or doctor/ physician if you feel unwell.

In case of skin contact	: Take off all contaminated clothing immediately. Wash off with soap and plenty of water. Get medical advice/ attention.
In case of eye contact	: Rinse with plenty of water. If easy to do, remove contact lens, if worn. Get medical advice/ attention.
If swallowed	: Get medical advice/ attention. Rinse mouth.
Most important symptoms and effects, both acute and delayed	: May be harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness. May damage fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	: Dry powder, Foam, Water spray, Carbon dioxide (CO ₂)
Specific hazards during fire fighting	: Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume.
Specific extinguishing methods	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Immediately evacuate personnel to safe areas. Remove undamaged containers from fire area if it is safe to do so.
Special protective equipment for fire-fighters	: Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Wear suitable 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	: Collect as much of the spill as possible with a suitable absorbent material.

7. HANDLING AND STORAGE

Handling

Technical measures	: Prevent generation of vapor or mist. Take precautionary measures against static discharge. Use explosion-proof equipment.
Local/Total ventilation	: Ensure adequate ventilation. Handle product only in closed system or provide appropriate exhaust ventilation at machinery.

Use a local exhaust ventilation.

- Advice on safe handling : Avoid contact with skin, eyes and clothing.
 Wear personal protective equipment.
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Wash hands and face thoroughly after handling.
- Avoidance of contact : Oxidizing agents, Reducing agents, Strong acids, Strong bases

Storage

- Conditions for safe storage : Keep container tightly closed.
 Store in a cool and shaded area.
 Keep in a well-ventilated place.
 Protect from moisture.
 Keep under inert gas.
 Store locked up.
 Avoid exposure to light.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

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

Personal protective equipment

- Respiratory protection : Gas mask
 Self-contained breathing apparatus
- Eye/face protection : Safety glasses
 Safety goggles
 Face-shield
- Skin and body protection : Impervious protective clothing
- Hand protection : Impervious gloves

*Use personal protective equipment(PPE) approved under appropriate government standards and follow local and national regulations.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Color : colorless - yellow
- Odor : No data available
- Odor Threshold : No data available
- pH : 7.7 - 8
- Melting point/freezing point : -24 °C
- Boiling point/boiling range : 202 °C
- Flash point : 86 °C
- Evaporation rate : No data available
- Flammability : No data available

Upper explosion limit / Upper flammability limit	: 9.5 %(V)
Lower explosion limit / Lower flammability limit	: 1.3 %(V)
Vapor pressure	: 39 Pa (25 °C)
Relative vapor density	: 3.4
Relative density	: 1.03
Solubility(ies)	
Water solubility	: completely miscible
Solubility in other solvents	: completely miscible Solvent: Alcohol
	: completely miscible Solvent: Ether
	: completely miscible Solvent: Acetone
	: completely miscible Solvent: Chloroform
	: completely miscible Solvent: Benzene
Partition coefficient: n-octanol/water (log value)	: 0.38
Autoignition temperature	: 245 °C
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: 1.33 mPa.s (40 °C)
Viscosity, kinematic	: 1.62 mm ² /s (25 °C)
Molecular weight	: 99.13 g/mol

10. STABILITY AND REACTIVITY

Reactivity	: No data available
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: None under normal processing.
Conditions to avoid	: Electrical spark Open flame Exposure to moisture. Exposure to light.
Incompatible materials	: Oxidizing agents, Reducing agents, Strong acids, Strong bases
Hazardous decomposition products	: Carbon monoxide, Carbon dioxide (CO ₂), Nitrogen oxides (NO _x)

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

May be harmful if swallowed.

Product:

Acute oral toxicity : Assessment: The component/mixture is minimally toxic after single ingestion.

Components:**1-Methyl-2-pyrrolidone:**

Acute oral toxicity : LD50 (Rat): 3,914 mg/kg
Assessment: The component/mixture is minimally toxic after single ingestion.

Acute dermal toxicity : LD50 (Rabbit): 8 g/kg
Assessment: The substance or mixture has no acute dermal toxicity

Acute toxicity (other routes of administration) : LD50 (Rat): 2,472 mg/kg
Application Route: Intraperitoneal injection

Skin corrosion/irritation

Causes skin irritation.

Product:

Result : Skin irritation

Components:**1-Methyl-2-pyrrolidone:**

Result : Skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Result : Eye irritation

Components:**1-Methyl-2-pyrrolidone:**

Result : Eye irritation

Respiratory or skin sensitization**Skin sensitization**

Not classified due to lack of data.

Respiratory sensitization

Not classified due to lack of data.

Germ cell mutagenicity

Not classified due to lack of data.

Carcinogenicity

Not classified due to lack of data.

Reproductive toxicity

May damage fertility or the unborn child.

Product:

Reproductive toxicity - Assess- : Presumed human reproductive toxicant

ment

Components:**1-Methyl-2-pyrrolidone:**

Reproductive toxicity - Assessment : Presumed human reproductive toxicant

STOT-single exposure

May cause respiratory irritation.
May cause drowsiness or dizziness.

Product:

Assessment : May cause respiratory irritation.
May cause drowsiness or dizziness.

Components:**1-Methyl-2-pyrrolidone:**

Assessment : May cause respiratory irritation.
May cause drowsiness or dizziness.

STOT-repeated exposure

May cause damage to organs (Liver, Bone marrow, Nervous system, Lungs) through prolonged or repeated exposure.

Product:

Target Organs : Liver, Bone marrow, Nervous system, Lungs
Assessment : May cause damage to organs through prolonged or repeated exposure.

Components:**1-Methyl-2-pyrrolidone:**

Target Organs : Liver, Bone marrow, Nervous system, Lungs
Assessment : May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity : No information available.

Aspiration toxicity

Not classified due to lack of data.

RTECS No. : UY5790000 (1-Methyl-2-pyrrolidone)

12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****1-Methyl-2-pyrrolidone:**

Toxicity to fish : LC50 (Oncorhynchus kisutch (coho salmon)): > 500 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 600.5 mg/l
Exposure time: 72 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 12.5 mg/l
Exposure time: 21 d

Persistence and degradability

Components:

1-Methyl-2-pyrrolidone:

Biodegradability : Biochemical oxygen demand
Biodegradation: 94 %

Bioaccumulative potential

Components:

1-Methyl-2-pyrrolidone:

Partition coefficient: n-octanol/water (log value) : 0.38

Mobility in soil

Components:

1-Methyl-2-pyrrolidone:

Distribution among environmental compartments : Koc: 4.6

Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Disposal in accordance with local and national regulations.
Take precautions against ignition or explode.
Entrust disposal to a licensed waste disposal company.

Contaminated packaging : Disposal in accordance with local and national regulations.
Before disposal of used container, remove contents completely.

14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No. : Not applicable
Proper shipping name : Not applicable
Class : Not applicable
Subsidiary risk : Not applicable
Packing group : Not applicable

IMDG-Code

UN number : Not applicable
Proper shipping name : Not applicable
Class : Not applicable
Subsidiary risk : Not applicable
Packing group : Not applicable
EmS Code : Not applicable

Domestic regulation

GB 6944/12268

UN number : Not applicable
Proper shipping name : Not applicable

Class	:	Not applicable
Subsidiary risk	:	Not applicable
Packing group	:	Not applicable

15. REGULATORY INFORMATION

The ingredients of this product are reported in the following inventories:

CH BAGREG	:	On the inventory, or in compliance with the inventory
TSCA	:	All substances listed as active on the TSCA inventory
AIIC	:	On the inventory, or in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
ENCS	:	On the inventory, or in compliance with the inventory
ISHL	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
NZIoC	:	On the inventory, or in compliance with the inventory
TECI	:	On the inventory, or in compliance with the inventory

16. OTHER INFORMATION

Revision Date	:	2025/02/10
Date format	:	yyyy/mm/dd

Disclaimer

This SDS was prepared sincerely based on the information obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. The products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling operations, sufficient care should be taken, in addition to the safety measures suitable for the given situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.