



# Material Safety Data Sheet

## N-methyl Pyrrolidone

Version: 2.0 EN  
Revision Date: 2024-12

### SECTION 1: IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

#### 1.1 Product identifiers

Product Name N-methyl Pyrrolidone  
CAT No.  
CAS No C5H9NO  
Synonyms N-Methyl-2-pyrrolidone, 1-Methyl-2-pyrrolidone

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Laboratory chemicals, Industrial & for professional use only

#### 1.3 Details of the supplier of the safety data sheet

Company China lithium Products technology Company Limited

9 HG ,No.99 LuJiang Road ,Xiamen city ,China

Telephone +86 592 2687860

Email info@lithium-chemical.com

#### 1.4 Emergency telephone number

Emergency phone # +86 592 2687860

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

##### GHS Classification

Flammable liquids (Category 4), H227

Acute toxicity, Oral (Category 5), H303

Skin corrosion/irritation (Category 2), H315

Serious eye damage/eye irritation (Category 2A), H319

Reproductive toxicity (Category 1B), H360

Specific target organ toxicity - single exposure (Category 3), respiratory tract irritation, H335

#### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger



**Hazard statement(s)**

H227	Combustible liquid
H303	May be harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H360	May damage fertility or the unborn child

**Precautionary statement(s)**

**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
P261	No smoking. Avoid breathing 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/ attentio
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
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**2.3 Physical and chemical hazards**

H227	Combustible liquid
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**2.4 Health hazards**

H303	May be harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H360	May damage fertility or the unborn child



H335 May cause respiratory irritation

## 2.5 Environmental hazards

Referring to current information, no environmental hazard

## 2.6 Other hazards

None

# SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

## 3.1 Substances

Substance name	N-methyl Pyrrolidone
Formula	C <sub>5</sub> H <sub>9</sub> NO
CAS No	872-50-
EC No	212-828-1

### Hazardous ingredients

**Chemical characterization:** N-methyl-2-pyrrolidone, Classification: Flammable liquids Category 4; Acute toxicity 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; H227, H303, H315, H319, H360, H335 , Concentration: <= 100 %

# SECTION 4: FIRST AID MEASURES

## 4.1 Description of first aid measures

### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance

### If inhaled

If inhaled If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician

### In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician

### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician

### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

## 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

## 4.3 Indication of any immediate medical attention and special treatment needed

No data available

# SECTION 5: FIREFIGHTING MEASURES

## 5.1 Extinguishing media



**Suitable extinguishing media**

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

**Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given

**5.2 Special hazards arising from the substance or mixture**

Carbon oxides

Nitrogen oxides (NO<sub>x</sub>)

Combustible

Vapors are heavier than air and may spread along floors

Forms explosive mixtures with air on intense heating

Development of hazardous combustion gases or vapours possible in the event of fire

**5.3 Advice for firefighters [www.lithium-chemical.com](http://www.lithium-chemical.com)**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**

No data available

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust

For personal protection see section 8

**6.2 Environmental precautions**

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

**6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. CLPC®). Dispose of properly. Clean up affected area

**6.4 Reference to other sections**

For disposal see section 13

**SECTION 7: HANDLING AND STORAGE**

**7.1 Precautions for safe handling**

**Advice on safe handling**

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols

**7.2 Conditions for safe storage, including any incompatibilities**

**Storage conditions**

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons

Store under inert gas. Moisture sensitive



**Storage class**

Storage class (TRGS 510): 6.1C: Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 Control parameters**

**Ingredients with workplace control parameters**

Contains no substances with occupational exposure limit values

**8.2 Exposure controls**

**Appropriate engineering controls**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance

**8.3 Personal protective equipment**

**Eye/face protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU)

**Skin protection**

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves

**Body Protection**

protective clothing

**Respiratory protection**

required when vapours are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system

**Control of environmental exposure**

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

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**9.1 Information on basic physical and chemical properties**

Appearance	Form: clear, liquid Colour: colorless
Odour	Amine-like
Odour Threshold	No data available
pH	8.5 - 10.0 at 100 g/l at 20 °C



Melting point/freezing point	-24 °C - lit
Initial boiling point and boiling range	202 °C - lit
Flash point	91 °C - Pensky-Martens closed cup - ISO 2719
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	Upper explosion limit: 9.5 %(V) Lower explosion limit: 1.3 %(V)
Vapour pressure	0.32 hPa at 20 °C - OECD Test Guideline 104
Vapour density	1.028 g/cm <sup>3</sup> at 25 °C - lit
Relative density	No data available
Water solubility	1,000 g/l at 20 °C - soluble
Partition coefficient: n- octanol/water	log Pow: -0.46 at 25 °C - OECD Test Guideline 107 - Bioaccumulation is not expected
Auto-ignition temperature	245 °C at 1,013 hPa - DIN 51794
Decomposition temperature	No data available
Viscosity	Viscosity, dynamic: 1.661 mPa.s at 25 °C
Explosive properties	No data available
Oxidizing properties	No data available

## 9.2 Other safety information

No data available

## SECTION 10: STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature)

### 10.3 Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapours with:

Oxidizing agents

Violent reactions possible with:

Strong acids

Strong bases

Various plastics

### 10.4 Conditions to avoid

Strong heating

### 10.5 Incompatible materials

No data available

### 10.6 Hazardous decomposition products



In the event of fire: see section 5

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

	LD50 Oral - Rat - male and female - 4,150 mg/kg (OECD Test Guideline 401)
<b>Acute toxicity</b>	LC50 Inhalation - Rat - male and female - 4 h - > 5.1 mg/l - aerosol (OECD Test Guideline 403) LD50 Dermal - Rat - male and female - > 5,000 mg/kg (OECD Test Guideline 402)
<b>Skin corrosion/irritation</b>	Skin - Rabbit Result: Irritating to skin. - 24 h (OECD Test Guideline 404) Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
	Eyes - Rabbit Result: Eye irritation (OECD Test Guideline 405)
<b>Serious eye damage/eye irritation</b>	Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
	Local lymph node assay (LLNA) - Mouse
<b>Respiratory or skin sensitization</b>	Result: negative (OECD Test Guideline 429)
	Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative
	Test Type: In vitro mammalian cell gene mutation test Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative
<b>Germ cell mutagenicity</b>	Test Type: unscheduled DNA synthesis assay Test system: rat hepatocytes Method: OECD Test Guideline 482 Result: negative



**Carcinogenicity**

No data available

**Reproductive toxicity**

May damage the unborn child

**Specific target organ toxicity - single exposure**

Inhalation - May cause respiratory irritation. - Respiratory system

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

No data available

**SECTION 12: ECOLOGICAL INFORMATION**

**12.1 Toxicity**

Toxicity to fish	static test LC50 - Oncorhynchus mykiss (rainbow trout) - > 500 mg/l - 96 h Remarks: (ECHA)
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - ca. 4,897 mg/l - 48 h Remarks: (IUCLID)
Toxicity to algae	static test EC50 - Desmodesmus subspicatus (green algae) - 672.8 mg/l - 72 h (DIN 38412)
Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity)	semi-static test NOEC - Daphnia magna (Water flea) - 12.5 mg/l - 21 d (OECD Test Guideline 211)

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects**

No data available

**SECTION 13: DISPOSAL CONSIDERATIONS**

**13.1 Waste treatment methods**

Product





Offer surplus and non-recyclable solutions to a licensed disposal company

**Contaminated packaging**

Dispose of as unused product

**SECTION 14: TRANSPORT INFORMATION**

**DOT (US)**

ADR/RID: No	UN proper shipping name: Not dangerous goods	Passenger Aircraft: No
Packaging group:No	Transport hazard class(es):No	Environmental hazards: No

**IMDG**

IMDG: No	UN proper shipping name: Not dangerous goodsM	Passenger Aircraft: No
Packaging group:No	Transport hazard class(es):No	Environmental hazards: No

**IATA**

IATA: No	UN proper shipping name: Not dangerous goods	Passenger Aircraft: No
Packaging group:No	Transport hazard class(es):No	Environmental hazards: No

**SECTION 15: REGULATORY INFORMATION**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

No data available

**15.2 Chemical safety assessment**

Please pay attention on the waste treatment should also comply with local regulations requirement

**SECTION 16: OTHER INFORMATION**

**Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. China Lithium Product Technology Co., Ltd.( CLPC) and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.lithium-chemical.com](http://www.lithium-chemical.com) for additional terms and conditions of sale.