

## N-Methyl-pyrrolidone NMP CAS872-50-4

### Overview:

N-Methylpyrrolidone is an organic substance with the chemical formula C<sub>5</sub>H<sub>9</sub>NO, a colorless to light yellow transparent liquid with a slight ammonia odor, miscible with water in any ratio, soluble in various organic solvents such as ether, acetone and esters, halogenated hydrocarbons, aromatic hydrocarbons, etc., and almost completely mixed with all solvents.

Chinese name: N-Methylpyrrolidone

Alias: 1-Methyl-2-pyrrolidone

English name: N-Methylpyrrolidone

Molecular formula(Formula): C<sub>5</sub>H<sub>9</sub>NO

Molecular Weight: 99.131

CAS No.: 872-50-4

Product Name: 1-Methyl-2-pyrrolidone; N-Methyl-pyrrolidine;

N-Methyl-A-pyrrolidone; Methyl-pyrrolidone; 1-Methyl-pyrrolidone

Molecular structure: See figure

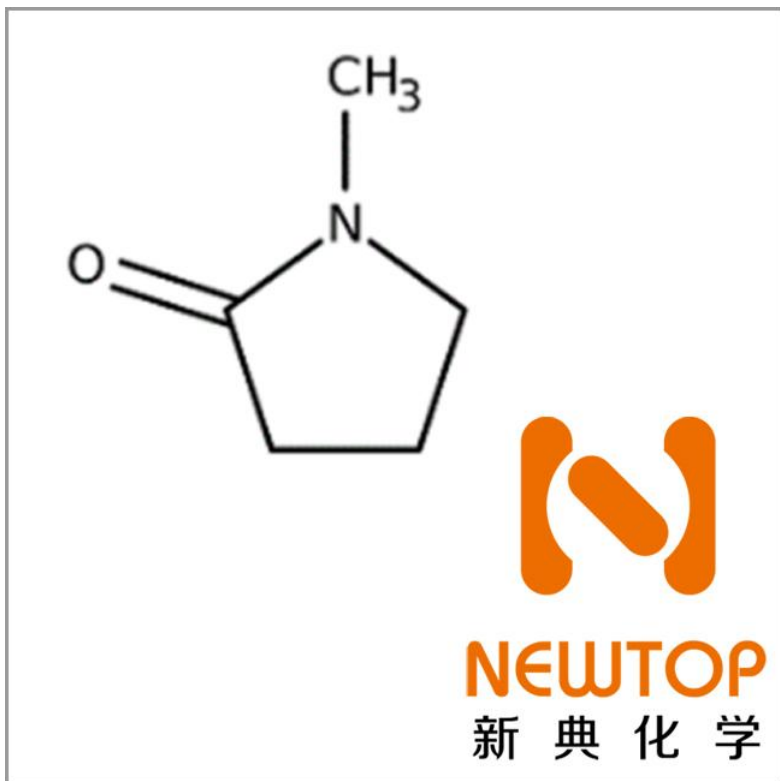
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EINECS No.: 212-828-1

MDL No. MFCD00003193



## Physical and chemical properties:

1. Property: Colorless transparent oily liquid with slight odor of amine.
2. Density: 1.028g/cm<sup>3</sup>
3. melting point: -24°C
4. boiling point: 202°C
5. Refractive index: 1.470
- 6 Viscosity: 1.65mPa-s
7. Flash point: 86.1°C
8. ignition point: 346°C
9. heat of combustion: 3010kJ/mol
10. critical temperature: 445°C
11. critical pressure: 4.76MPa

12. electrical conductivity:  $(1\sim 2)\times 10^{-8}$ s/m

13. solubility: soluble in water, ethanol, ether, acetone, ethyl acetate, chloroform and benzene, soluble in most organic and inorganic compounds, polar gases, natural and synthetic polymers

## Uses:

It is widely used in the refining of advanced lubricants, synthesis of polymers, insulating materials, pesticides, pigments and cleaning agents, etc.

Application 2】 It is an excellent solvent, widely used as extractant for aromatic hydrocarbon extraction, lube oil refining, acetylene concentration, synthetic gas desulfurization, etc. It is also used for industrial cleaning, etc.

N-Methylpyrrolidone is an excellent extraction solvent, widely used as extractant in the process of aromatic extraction, acetylene concentration, butadiene separation and desulfurization of synthesis gas, etc. It is also a solvent in the production of pesticides, engineering plastics, paints, synthetic fibers, integrated circuits, etc. It can also be used as industrial detergent, dispersant, dyeing agent, lubricant antifreeze agent, etc. The product has low toxicity, oral LD50 for rats is 7ml/kg.

## Stability related:

1. Colorless liquid, with ammonia smell, the product has low toxicity. It can be miscible with water and soluble in most organic solvents such as ether and acetone.

Can dissolve most organic and inorganic compounds, polar gases, natural and

synthetic polymer compounds.

2. Chemical properties: relatively stable in neutral solution. After 8 hours in 4% sodium hydroxide solution, 50%-70% of it is hydrolyzed. In concentrated hydrochloric acid, hydrolysis gradually occurs to produce 4-methylaminobutyric acid  $\text{CH}_3\text{NH}(\text{CH}_2)_3\text{COOH}$ . due to the reaction of carbonyl group, it can produce condensation ketone or thio-pyrrolidone.

N-Methylpyrrolidone is weakly basic and can produce hydrochloride. It forms adducts with heavy metal salts, for example, with nickel bromide heated to  $150^\circ\text{C}$  to produce  $\text{NiBr}_2(\text{C}_5\text{H}_9\text{ON})_3$  with a melting point of  $105^\circ\text{C}$ .

## Storage and transportation:

Should be kept sealed and stored in dry, cool and ventilated warehouse

## Package:

200KG/drum Storage: It is recommended to be stored in dry and cool area with proper ventilation. Please fasten the lid of the package as soon as possible after the original packaging to prevent the mixing of other substances such as moisture from affecting the product performance. Do not inhale dust and avoid skin and mucous membrane contact. Smoking, eating and drinking are prohibited in the workplace. After work, shower and change clothes. Store contaminated clothes separately and wash them before use. Maintain good hygiene habits.