

# Material Safety Data Sheet

## 1-Methyl-2-pyrrolidinone

**MSDS 872-50-4**

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** 1-Methyl-2-pyrrolidinone

**Catalog Numbers:** CP-A8880, CP-B8880, CP-C8880

**Synonyms:** NMP; N-Methylpyrrolidone; N-Methylpyrrolidinone; N-Methyl-2-pyrrolidone; N-Methyl-2-pyrrolidinone; M-Pyrol; 1-Methyl-2-pyrrolidone

**Company Identification:** **ChemPure Brand Chemicals**  
American Scientific Manufacturing, Inc.  
P.O.BOX 5483  
Plymouth, MI 48185

**For information, call:** 734-331-0026

**Emergency Number:** 734-331-0026

**For CHEMTREC assistance, call:** 800-424-9300

**For International CHEMTREC assistance, call:** 01-703-527-3887

### Section 2 - Composition, Information on Ingredients

| CAS#     | Chemical Name            | Percent | EINECS/ELINCS |
|----------|--------------------------|---------|---------------|
| 872-50-4 | 1-Methyl-2-pyrrolidinone | 99      | 212-828-1     |

### Section 3 - GHS Hazard and Precautionary Statements

#### EMERGENCY OVERVIEW

**Warning!** Combustible liquid and vapor. Causes eye, skin, and respiratory tract irritation. May cause harm to the unborn child. May be harmful if swallowed, inhaled, or absorbed through the skin. Light sensitive. Hygroscopic (absorbs moisture from the air). May damage fertility or the unborn child

**Target Organs:** Respiratory system, eyes, skin.

Appearance: clear colorless liquid. Flash Point: 91 deg C.

Hazard Statements : H360-H315-H319-H335-H227

Precautionary Statements : P210-P261-P280-P305+P351+P338-P405-P501A



**TSCA:** Yes  
**RTECS:** UY5790000

**Risk Phrases:** 61-36/37/38

May cause harm to the unborn child. Irritating to eyes, respiratory system and skin.

**Safety Phrases:** 53-45

Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

## Potential Health Effects

**Eye:** Causes eye irritation. May cause temporary corneal clouding.

**Skin:** Causes skin irritation. May be harmful if absorbed through the skin. Not expected to cause an allergic skin reaction. Because of the high permeability rate of N-methylpyrrolidone in human skin, prolonged exposures should be avoided.

**Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

**Inhalation:** Causes respiratory tract irritation. May cause headache. Material has a very low vapor pressure at room temperature, so inhalation exposures are not expected unless material is heated or misted.

**Chronic:** Prolonged or repeated skin contact may cause dermatitis. Adverse reproductive effects have been reported in animals. Testicular effects in rats were noted after repeated, high-dose oral and inhalation exposures.(BASF). Human occupational exposure has been associated with chronic eye irritation, headaches, and irritant contact dermatitis. Airborne concentrations of 49 to 83 ppm are intolerable.(REPROTEXT)

## Section 4 - First Aid Measures

**Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

**Skin:** In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.

**Ingestion:** If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Notes to Physician:** Treat symptomatically and supportively.

## Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Combustible liquid and vapor.

**Extinguishing Media:** Use water spray, dry chemical, carbon dioxide, or appropriate foam.

**Flash Point:** 91 deg C ( 195.80 deg F)

**Autoignition Temperature:** 346 deg C ( 654.80 deg F)

**Explosion Limits, Lower:**1.3%

**Upper:** 9.5%

**NFPA Rating:** (estimated) Health: 2; Flammability: 2; Instability: 0

## Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Provide ventilation.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep away from heat and flame. Avoid breathing vapor or mist.

**Storage:** Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. Keep under a nitrogen blanket.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

### Exposure Limits

| Chemical Name            | ACGIH       | NIOSH       | OSHA - Final PELs |
|--------------------------|-------------|-------------|-------------------|
| 1-Methyl-2-pyrrolidinone | none listed | none listed | none listed       |

**OSHA Vacated PELs:** 1-Methyl-2-pyrrolidinone: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

**Eyes:** Wear chemical splash goggles.

**Skin:** Wear appropriate gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

## Section 9 - Physical and Chemical Properties

|                                   |                                     |
|-----------------------------------|-------------------------------------|
| <b>Physical State:</b>            | Liquid                              |
| <b>Appearance:</b>                | clear colorless                     |
| <b>Odor:</b>                      | amine-like - mild odor              |
| <b>pH:</b>                        | 8.5-10.0 (100 g/l H <sub>2</sub> O) |
| <b>Vapor Pressure:</b>            | 0.342 mm Hg @ 25 deg C              |
| <b>Vapor Density:</b>             | 3.4 (air=1)                         |
| <b>Evaporation Rate:</b>          | Not available.                      |
| <b>Viscosity:</b>                 | 1.65 cps @ 25 deg C                 |
| <b>Boiling Point:</b>             | 202 deg C @ 760 mmHg                |
| <b>Freezing/Melting Point:</b>    | -24 deg C                           |
| <b>Decomposition Temperature:</b> | Not available.                      |
| <b>Solubility:</b>                | Soluble.                            |
| <b>Specific Gravity/Density:</b>  | 1.030                               |

**Molecular Formula:**  
**Molecular Weight:**

C5H9NO  
99.13

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable at room temperature in closed containers under normal storage and handling conditions.

**Conditions to Avoid:** Light, ignition sources, excess heat, exposure to moist air or water.

**Incompatibilities with Other Materials:** Strong oxidizing agents, strong acids.

**Hazardous Decomposition Products:** Nitrogen oxides, carbon monoxide, carbon dioxide.

**Hazardous Polymerization:** Will not occur.

## Section 11 - Toxicological Information

**RTECS#:**

**CAS#** 872-50-4: UY5790000

**LD50/LC50:**

**CAS#** 872-50-4:

Draize test, rabbit, eye: 100 mg Moderate;

Oral, mouse: LD50 = 5130 mg/kg;

Oral, rat: LD50 = 3914 mg/kg;

Skin, rabbit: LD50 = 8 gm/kg;

Sensitization test (guinea pig): negative; Patch test (humans): negative.(Merck)

**Carcinogenicity:**

**CAS#** 872-50-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No data available.

**Teratogenicity:** Proposition 65 maximum allowable dose level for developmental toxicity for N-methylpyrrolidone is 3200 ug/day for the inhalation route and 17,000 ug/day for the dermal route.

**Reproductive Effects:** See actual entry in RTECS for complete information.

**Mutagenicity:** See actual entry in RTECS for complete information.

**Neurotoxicity:** No data available.

**Other Studies:**

## Section 12 - Ecological Information

**Ecotoxicity:** Daphnia: Daphnia: 4897 mg/l; 48 h; EC50Fish: Gold orfe: 4000 mg/l; 96 h; LC50Bacteria: >9000 mg/l; 48 h; EC50Algae: >500 mg/l; 72 h; IC50 log Pow = -0.46 (25°C)BOD5 = 1100 mg/l.COD = 1600 mg/l.

**Environmental:** No information available.

**Physical:** No information available.

**Other:** Biodegradable.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

## Section 14 - Transport Information

|                       | US DOT        | Canada TDG    |
|-----------------------|---------------|---------------|
| <b>Shipping Name:</b> | Not regulated | Not Regulated |
| <b>Hazard Class:</b>  | 3             |               |
| <b>UN Number:</b>     | 1933          |               |
| <b>Packing Group:</b> | 1             |               |

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 872-50-4 is listed on the TSCA inventory.

#### Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

#### Chemical Test Rules

CAS# 872-50-4: 40 CFR 799.5000

#### Section 12b

None of the chemicals are listed under TSCA Section 12b.

#### TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

#### CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

#### SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

#### SARA Codes

CAS # 872-50-4: immediate, delayed, fire.

#### Section 313

This material contains 1-Methyl-2-pyrrolidinone (CAS# 872-50-4, 99%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40

#### Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

#### Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**

CAS# 872-50-4 can be found on the following state right to know lists: Pennsylvania, Minnesota, Massachusetts.

**California Prop 65**

WARNING: This product contains 1-Methyl-2-pyrrolidinone, a chemical known to the state of California to cause developmental reproductive toxicity.

California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations**

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:**

T

**Risk Phrases:**

R 36/37/38 Irritating to eyes, respiratory system and skin.

R 61 May cause harm to the unborn child.

**Safety Phrases:**

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 37/39 Wear suitable gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 53 Avoid exposure - obtain special instructions before use.

**WGK (Water Danger/Protection)**

CAS# 872-50-4: 1

**Canada - DSL/NDSL**

CAS# 872-50-4 is listed on Canada's DSL List.

**Canada - WHMIS**

This product has a WHMIS classification of B3, D2A, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List**

**Section 16 - Additional Information**

**MSDS Creation Date:** 4/09/2013, 11:42AM

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