SAFETY DATA SHEET

1. Identification

Product identifier

Product code: M1557
Product Name: 1-METHYL-2-PYRROLIDINONE, ANHYDROUS

Other means of identification

Synonyms:
1-Methyl-2-pyrrolidinone
1-Methyl-2-pyrrolidone
1-Methyl-5-pyrrolidinone
M-Pyrol
1-Methylazacyclopentan-2-one
N-Methyl-gamma-Butyrolactam
1-Methylpyrrolidinone
1-Methylpyrrolidone
2-Pyrrolidinone, 1-methyl-
Methylpyrrolidone
Methyl Pyrrolidone
N-Methyl-2-pyrrolidinone
N-Methyl-2-pyrrolidone
N-Methyl-alpha-pyrrolidone
N-Methylpyrrolidinone
N-Methylpyrrolidone
NMP

CAS #:
872-50-4
RTECS #
UY5790000
Cl#:
Not available

Recommended use of the chemical and restrictions on use

Recommended use: Solvent.
Uses advised against: No information available

Supplier:
Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA  90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com
Emergency telephone number 
Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2A</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Category 1B</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Flammable liquids</td>
<td>Category 4</td>
</tr>
</tbody>
</table>

**Label elements**

**Danger**

**Hazard statements**
Causes skin irritation  
Causes serious eye irritation  
May damage fertility or the unborn child  
May cause respiratory irritation  
Combustible liquid

**Hazards not otherwise classified (HNOC)**
Not Applicable

**Other hazards**
May be harmful in contact with skin

**Precautionary Statements - Prevention**
Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Wash face, hands and any exposed skin thoroughly after handling  
Wear protective gloves/protective clothing/eye protection/face protection  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Keep away from heat/sparks/open flames/hot surfaces. — No smoking  
Keep cool

**Precautionary Statements - Response**
*IF exposed or concerned: Get medical advice/attention*
In case of fire: Use CO2, dry chemical, or foam to extinguish.  
*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.*  
*IF ON SKIN: Wash with plenty of water*  
*If skin irritation occurs: Get medical advice/attention*  
*Take off contaminated clothing and wash it before reuse*  
*IF INHALED: Remove person to fresh air and keep comfortable for breathing.*

**Precautionary Statements - Storage**
Store locked up  
Store in a well-ventilated place. Keep container tightly closed

**Precautionary Statements - Disposal**
Dispose of contents/container to an approved waste disposal plant

**Product code:** M1557  
**Product name:** 1-METHYL-2-PYRROLIDINONE, ANHYDROUS
3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Formula:</th>
<th>CAS No</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Methyl-2-pyrrolidinone</td>
<td>872-50-4</td>
<td>100</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First aid measures

General Advice: National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention. If skin irritation persists, call a physician.

Eye Contact: Flush eyes with water for 15 minutes. Get medical attention.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms
- Irritating to eyes and skin
- Irritating to respiratory system
- May cause an allergic skin reaction
- May be absorbed through the skin in harmful amounts
- Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Dry chemical. Carbon dioxide (CO2). Water spray mist or foam.

Unsuitable Extinguishing Media: High volume water jet. Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Hazardous combustion products
Carbon Monoxide, Carbon Dioxide. Nitrogen oxides (NOx).

Specific hazards
Combustible material. May be ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, sewers, sewers).
basements, tanks). Container explosion may occur under fire conditions or when heated. It is combustible when exposed to powerful oxidizers.

Special Protective Actions for Firefighters

Specific Methods: Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

Specific Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded. Remove all sources of ignition.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment: Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container.

Methods for cleaning up: Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use clean non-sparking tools to collect absorbed material. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions: Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

Safe Handling Advice: Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not ingest. Do not breathe vapors or spray mist. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities


Incompatible Materials:

Product code: M1557
Product name: 1-METHYL-2-PYRROLIDINONE, ANHYDROUS
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

**United States**

<table>
<thead>
<tr>
<th>Formula:</th>
<th>CAS No</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WEEL</th>
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<td>872-50-4</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>10 ppm TWA</td>
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**Canada**

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<th>Canada - British Columbia</th>
<th>Canada - Ontario</th>
<th>Canada - Quebec</th>
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<tr>
<td>N-Methyl-2-pyrrolidinone</td>
<td>872-50-4</td>
<td>None</td>
<td>None</td>
<td>400 mg/m³ TWA</td>
<td>None</td>
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**Australia and Mexico**

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<th>Mexico</th>
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<td>N-Methyl-2-pyrrolidinone</td>
<td>872-50-4</td>
<td>75 ppm STEL</td>
<td>None</td>
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<td></td>
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<td>309 mg/m³ STEL</td>
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<td></td>
<td></td>
<td>25 ppm TWA</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>103 mg/m³ TWA</td>
<td></td>
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</table>

Appropriate engineering controls

**Engineering measures to reduce exposure:**

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

**Individual protection measures, such as personal protective equipment**

**Personal Protective Equipment**

**Eye protection:**

Goggles

**Skin and body protection:**

Long sleeved clothing
Chemical resistant apron
Gloves

**Respiratory protection:**

Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Respiratory protection is not necessary for normal handling. Good room ventilation or use of local exhaust (fume hood) is sufficient. Use a vapor respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentrations of mist or vapor, inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.

**Hygiene measures:**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and

**Product code:** M1557
**Product name:** 1-METHYL-2-PYRROLIDINONE, ANHYDROUS
immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Physical state: Liquid</td>
<td>Appearance: No information available.</td>
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<tr>
<td>Molecular/Formula weight (g/mole): 99.14</td>
<td>Flammability (solid, gas): Combustible</td>
</tr>
<tr>
<td>Flash Point Tested according to:</td>
<td>Autoignition Temperature (°C/°F): 346.11 °C/655 °F</td>
</tr>
<tr>
<td>Upper Explosion Limit (%): 9.5%</td>
<td>Melting point/range(°C/°F): -24 °C/-11.2 °F</td>
</tr>
<tr>
<td>Boiling point/range(°C/°F): 202 °C/395.6 °F</td>
<td>Bulk density: No information available</td>
</tr>
<tr>
<td>Specific gravity: 1.026</td>
<td>pH: No information available</td>
</tr>
<tr>
<td>Evaporation rate: 0.06 (Butyl acetate = 1)</td>
<td>Vapor density: 3.4</td>
</tr>
<tr>
<td>Odor threshold (ppm): No information available</td>
<td>Partition coefficient (n-octanol/water):</td>
</tr>
<tr>
<td>Misibility: Miscible with water</td>
<td>Miscible with Castor Oil</td>
</tr>
<tr>
<td>Misibility: Miscible with lower alcohols</td>
<td>Miscible with Ethyl Acetate</td>
</tr>
<tr>
<td>Misibility: Miscible with ketones</td>
<td>Miscible with Chloroform</td>
</tr>
<tr>
<td>Misibility: Miscible with Benzene</td>
<td>Misible with water</td>
</tr>
<tr>
<td>Misibility: Miscible with hydrocarbons and</td>
<td>Solubility: Moderately soluble in aliphatic</td>
</tr>
<tr>
<td>Miscibility: Miscible with many organic and</td>
<td>hydrocarbons and dissolves many</td>
</tr>
<tr>
<td>Miscibility: Miscible with many inorganic</td>
<td>organic and inorganic compounds</td>
</tr>
<tr>
<td>Miscibility: Miscible with many inorganic</td>
<td></td>
</tr>
<tr>
<td>Miscibility: Miscible with many inorganic</td>
<td></td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity
- Reactive with oxidizing agents
- Reactive with acids
- Reacts with strong bases
- Reacts with reducing agents
- Hygroscopic. It absorbs moisture from the air
- It reacts with chlorinating agents (e.g. cobalt chloride, thionyl chloride, phosphorous oxychloride, pentachlorophosphorous) to form the amide
- It reacts with sulfur and carbon disulfide at high temperatures and pressures

Chemical stability
- Stability: Hygroscopic. Stable under recommended storage conditions.

Product code: M1557
Product name: 1-METHYL-2-PYRROLIDINONE, ANHYDROUS
Possibility of Hazardous Reactions: Hazardous polymerization does not occur.


Incompatible Materials:
- Oxidizing agents
- Reducing agents
- Acids
- Bases

Hazardous decomposition products:

Other Information
- Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
- Skin
- Eyes
- Inhalation
- Ingestion

Acute Toxicity

Component Information

N-Methyl-2-pyrrolidinone

<table>
<thead>
<tr>
<th>CAS No</th>
<th>872-50-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50/oral/rat =</td>
<td>3914 mg/kg Oral LD50 Rat (LOLI; RTECS)</td>
</tr>
<tr>
<td></td>
<td>3598 mg/kg (EU Chemicals Bureau IUCLID dataset)</td>
</tr>
<tr>
<td>LD50/oral/mouse =</td>
<td>5130 mg/kg (RTECS)</td>
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<tr>
<td></td>
<td>7725 mg/kg (EU Chemicals Bureau IUCLID dataset)</td>
</tr>
<tr>
<td>LD50/dermal/rabbit =</td>
<td>8 g/kg (RTECS; LOLI)</td>
</tr>
<tr>
<td></td>
<td>2000-4000 mg/kg (EU Chemicals Bureau IUCLID dataset)</td>
</tr>
<tr>
<td>LD50/dermal/rat =</td>
<td>2500-5000 mg/kg</td>
</tr>
<tr>
<td>LC50/inhalation/rat =</td>
<td>3.1 mg/L Inhalation LC50 Rat 4 h (LOLI)</td>
</tr>
<tr>
<td></td>
<td>3.1-8.8 mg/l 4 h (EU Commission Chemicals Bureau IUCLID dataset)</td>
</tr>
<tr>
<td>LC50/inhalation/mouse =</td>
<td>No information available</td>
</tr>
<tr>
<td>Other LD50 or LC50 information =</td>
<td>No information available</td>
</tr>
</tbody>
</table>

Product Information

LD50/oral/rat =
Value - Acute Tox Dermal = 3914 mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = 5130 mg/kg

LD50/dermal/rabbit
Value - Acute Tox Dermal = 2000-4000 mg/kg
LD50/dermal/rat
VALUE - Acute Tox Dermal = 2500-5000 mg/kg

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = 3.1 mg/l

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

**Symptoms**

**Skin Contact:** Causes skin irritation.

**Eye Contact:** Causes serious eye irritation. Moderately irritating to the eyes.

**Inhalation** Irritating to respiratory system.

**Ingestion** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause abdominal pain.

**Aspiration hazard** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Chronic Toxicity** Prolonged or repeated inhalation may cause difficulty breathing, shortness of breath, and pulmonary edema. Prolonged or repeated inhalation may affect the kidneys. Prolonged or repeated inhalation may affect metabolism (weight loss). Prolonged or repeated inhalation may affect the blood (changes in white blood cell count). Prolonged or repeated ingestion may affect the spleen. Prolonged or repeated ingestion may affect the liver, and kidneys. Prolonged or repeated ingestion may affect the blood (changes in serum composition). Prolonged or repeated ingestion may affect the central nervous system (somnolence, muscle weakness, headache, dizziness). Prolonged skin contact may cause skin irritation and/or dermatitis. Symptoms of skin irritation may include skin rash, blisters, and redness. Prolonged or repeated skin contact may cause dryness of the skin.

**Sensitization:** No information available.

**Mutagenic Effects:** May affect genetic material
Experiments with bacteria and/or yeast have shown mutagenic effects

**Carcinogenic effects:** Not considered carcinogenic.

<table>
<thead>
<tr>
<th>Formula:</th>
<th>CAS No</th>
<th>IARC</th>
<th>ACGIH - Carcinogens</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Methyl-2-pyrrolidinone</td>
<td>872-50-4</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

**ACGIH (American Conference of Governmental Industrial Hygienists)**

**IARC (International Agency for Research on Cancer)**

**Product code:** M1557

**Product name:** 1-METHYL-2-PYRROLIDINONE, ANHYDROUS
Reproductive toxicity
May damage fertility or the unborn child

Reproductive Effects:
May impair fertility
Developmental Effects:
May cause adverse developmental effects based on animal data
Teratogenic Effects:
May cause birth defects (teratogenic effects) based on animal test data
Shown teratogenic effects in animal experiments

Specific Target Organ Toxicity
STOT - single exposure
STOT - single exposure, respiratory system.
STOT - repeated exposure
No information available.
Target Organs:
Central nervous system, Skin, Liver, Kidneys, Blood, Respiratory system, Spleen, Bone Marrow, Thymus.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Ecotoxicity effects:
Aquatic environment.

\(N\)-Methyl-2-pyrrolidinone - 872-50-4

Algae/aquatic plants
500 mg/L EC50 Desmodesmus subspicatus 72 h
1072 mg/L LC50 Pimephales promelas 96 h static 1
1400 mg/L LC50 Poecilia reticulata 96 h static 1
4000 mg/L LC50 Leuciscus idus 96 h static 1
832 mg/L LC50 Lepomis macrochirus 96 h static 1

Fish
Crustacea
4897 mg/L EC50 Daphnia magna 48 h

Persistence and degradability:
Readily biodegradable (90%)
Bioaccumulative potential:
No information available.
Mobility in soil:
No information available.
Other adverse effects:
No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
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<tbody>
<tr>
<td>N-Methyl-2-pyrrolidinone</td>
<td>872-50-4</td>
<td>None</td>
<td>None</td>
<td>None</td>
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</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

Product code: M1557
Product name: 1-METHYL-2-PYRROLIDINONE, ANHYDROUS
**DOT**
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Subsidiary Class:** No information available
- **Packing group:** No information available
- **Emergency Response Guide Number:** No information available
- **Marine Pollutant:** No data available
- **DOT RQ (lbs):** No information available
- **Special Provisions:** No Information available
- **Symbol(s):** No information available
- **Description:** No information available

**TDG (Canada)**
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Subsidiary Risk:** No information available
- **Packing Group:** No information available
- **Marine Pollutant:** No Information available
- **Description:** No information available

**ADR**
- **UN Number:** -
- **Proper Shipping Name:** No information available
- **Transport hazard class(es):** No information available
- **Packing group:** No information available
- **Subsidiary Risk:** No information available

**IMDG**
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Subsidiary Risk:** No information available
- **Packing Group:** No information available
- **Marine Pollutant:** No information available

**RID**
- **UN Number:** Not Regulated
- **Proper Shipping Name:** No information available
- **Transport hazard class(es):** No information available
- **Subsidiary Risk:** No information available
- **Packing group:** No information available

**ICAO (air)**
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Subsidiary Risk:** No information available
- **Packing Group:** No information available

**IATA**
- **UN Number:** Not Regulated
- **Proper Shipping Name:** No information available

**Product code:** M1557
**Product name:** 1-METHYL-2-PYRROLIDINONE, ANHYDROUS
### 15. REGULATORY INFORMATION

#### International Inventories

<table>
<thead>
<tr>
<th>Formula:</th>
<th>CAS No</th>
<th>U.S. TSCA</th>
<th>KOREA KECL</th>
<th>Philippines (PICCS)</th>
<th>Japan ENCS</th>
<th>China IECSC</th>
<th>Australia AICS</th>
<th>EINECS-No.</th>
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<td>N-Methyl-2-pyrrolidinone</td>
<td>872-50-4</td>
<td>Present</td>
<td>Present KE-25324</td>
<td>Present</td>
<td>(5)-113</td>
<td>Present</td>
<td>Present</td>
<td>Present 212-828-1</td>
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#### U.S. Regulations

**N-Methyl-2-pyrrolidinone**
- Massachusetts RTK: Present
- New Jersey RTK Hazardous Substance List: 3716
- New Jersey (EHS) List: 3716 500 lb TPQ
- New Jersey - Discharge Prevention - List of Hazardous Substances: Present
- Pennsylvania RTK: Present

**California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.**

**Chemicals Known to the State of California to Cause Cancer:**
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

**Chemicals Known to the State of California to Cause Reproductive Toxicity:**

⚠️ **WARNING:** This product contains a chemical known to the State of California to cause birth defects or other reproductive harm (See table below)

<table>
<thead>
<tr>
<th>Formula:</th>
<th>CAS No</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity:</th>
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<td>N-Methyl-2-pyrrolidinone</td>
<td>872-50-4</td>
<td>Not Listed</td>
<td>developmental toxicity</td>
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#### CERCLA/SARA

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<tr>
<th>Formula:</th>
<th>CAS No</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
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<tbody>
<tr>
<td>N-Methyl-2-pyrrolidinone</td>
<td>872-50-4</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>1.0 % de minimis concentration</td>
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#### U.S. TSCA

<table>
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<th>TSCA 8(d) - Health and Safety Reporting</th>
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</thead>
<tbody>
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<td>N-Methyl-2-pyrrolidinone</td>
<td>872-50-4</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

#### Canada

**WHIMIS 2015 - GHS Classifications**

**Product code:** M1557  
**Product name:** 1-METHYL-2-PYRROLIDINONE, ANHYDROUS
WHMIS 2015 Hazard Classification

Component
N-Methyl-2-pyrrolidinone
872-50-4 (100)

WHMIS 2015 Hazard Classification
Flammable liquids - Category 4: H227 Combustible liquid.
Serious Eye Damage/Eye Irritation - Category 2B: H320 Causes eye irritation.
Reproductive Toxicity - Category 1: H360 May damage fertility or the unborn child.

Canada Hazardous Products Regulation
This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR.

DSL/NDSL

<table>
<thead>
<tr>
<th>Formula: N-Methyl-2-pyrrolidinone</th>
<th>CAS No</th>
<th>Canada (DSL)</th>
<th>Canada (NDSL)</th>
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<td>872-50-4</td>
<td>Present</td>
<td>Not Listed</td>
</tr>
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</table>

EU Classification

EU GHS - SV - CLP 1272/2008

<table>
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<th>Formula: N-Methyl-2-pyrrolidinone</th>
<th>CAS No</th>
<th>EU GHS - SV - CLP (1272/2008)</th>
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<tbody>
<tr>
<td>N-Methyl-2-pyrrolidinone</td>
<td>872-50-4</td>
<td></td>
</tr>
</tbody>
</table>

EU - CLP (1272/2008)

R-phrase(s)
R61 - May cause harm to the unborn child
R36/37/38 - Irritating to eyes, respiratory system and skin

S-phrase(s)
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
S53 - Avoid exposure - obtain special instructions before use

<table>
<thead>
<tr>
<th>Formula: N-Methyl-2-pyrrolidinone</th>
<th>CAS No</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
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<td>N-Methyl-2-pyrrolidinone</td>
<td>872-50-4</td>
<td>Xi; R36/37/38</td>
<td>5%&lt;=C: Repr.Cat.2;</td>
<td>S53 S45</td>
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<td>R10%&lt;=C: Xi;</td>
<td>R36/37/38</td>
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<td>R36/37/38</td>
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</table>

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
Xi - Irritant

Product code: M1557
Product name: 1-METHYL-2-PYRROLIDINONE, ANHYDROUS
16. OTHER INFORMATION

Preparation Date: 06/03/2015
Revision date: 11/30/2018
Prepared by: Sonia Owen

Disclaimer: All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet