# TCI AMERICA
## SAFETY DATA SHEET

**Revision number:** 2
**Revision date:** 04/08/2019

## *1. IDENTIFICATION*

**Product name:** 1-Methyl-2-pyrrolidone
**Product code:** M0418

**Product use:** For laboratory research purposes.
**Restrictions on use:** Not for drug or household use.

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TCI America
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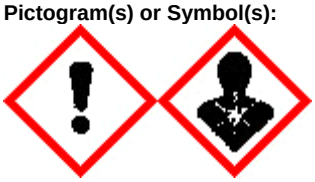
## *2. HAZARD(S) IDENTIFICATION*

**OSHA Haz Com: CFR 1910.1200:**
**WHMIS 2015:**
Skin Corrosion/Irritation [Category 2]
Eye Damage/Irritation [Category 2A]
Toxic to Reproduction [Category 1B]
Specific Target Organ Toxicity (Single Exposure) [Category 3]
Specific Target Organ Toxicity (Repeated Exposure) [Category 2]

**Signal word:** Danger!

**Hazard Statement(s):**
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: Liver Bone Marrow Nervous System Lung

**Pictogram(s) or Symbol(s):**



**Precautionary Statement(s):**

**[Prevention]** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist, vapors or spray. Use only outdoors or in a well-ventilated area. Wash hands and face thoroughly after handling. Wear protective gloves, protective clothing, face protection.

**[Response]** If on skin: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice or attention. Take off contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell. 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 or attention. If exposed or concerned: Get medical advice or attention.

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

**[Disposal]** Dispose of contents and container in accordance with local, regional, national regulations (e.g. US: 40 CFR Part 261, EU:91/156/EEC, JP: Waste Disposal and Cleaning Act, etc.).

**Hazards not otherwise classified: [HNOC]** May be harmful if swallowed.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| | |
|---|---|
| **Substance/mixture:** | Substance |
| **Components:** | 1-Methyl-2-pyrrolidone |
| **Percent:** | >99.0%(GC) |
| **CAS RN:** | 872-50-4 |
| **Molecular Weight:** | 99.13 |
| **Chemical Formula:** | $C_5H_9NO$ |
| **Synonyms:** | 1-Methyl-2-pyrrolidinone , NMP |

## 4. FIRST-AID MEASURES

**Description of first aid measures**

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|---|---|
| **Inhalation:** | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention. |
| **Skin contact:** | Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Get medical advice/attention. |
| **Eye contact:** | Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Get medical advice/attention. |
| **Ingestion:** | Get medical advice/attention.Rinse mouth. |

**Symptoms/effects:**

| | |
|---|---|
| **Acute:** | Redness. |
| **Delayed:** | May have effects on the respiratory tract. |

**Indication of any immediate medical attention:**
Not available.
**Notes to physician:**
No data available

## 5. FIRE-FIGHTING MEASURES

| | |
|---|---|
| **Suitable extinguishing media:** | Dry chemical, foam, water in large amounts, carbon dioxide. |
| **Specific hazards arising from the chemical:** | Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume. |
| **Hazardous combustion products:** | These products include: Carbon oxides Nitrogen oxides |
| **Other specific hazards:** | Closed containers may explode from heat of a fire. |
| **Advice for firefighters:** | Wear self-contained breathing apparatus if possible. |

## 6. ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| **Personal precautions, protective equipment and emergency procedures:** | Use personal 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:** | Absorb spilled material in a suitable absorbent (e.g. rag, dry sand, earth, saw-dust). In case of large amount of spillage, contain a spill by bunding. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations. |

## 7. HANDLING AND STORAGE

| | |
|---|---|
| **Precautions for safe handling:** | Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent generation of vapour or mist. Wash hands and face thoroughly after handling.<br>Use a closed system if possible. Use a ventilation, local exhaust if vapour or aerosol will be generated.<br>Avoid all contact! |

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

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|---|---|
| **Storage conditions:** | Keep container tightly closed. Store in a cool, dark and well-ventilated place.<br>Store under inert gas. Protect from moisture. Store locked up.<br>Store away from incompatible materials such as oxidizing agents.<br>Light-sensitive Hygroscopic |
| **Packaging material:** | Comply with laws. |

## *8. EXPOSURE CONTROLS / PERSONAL PROTECTION*

**Exposure limits:**
**JSOH OELs(TWA):** 1 ppm (skin)

**Appropriate engineering controls:** Follow safe industrial engineering/laboratory practices when handling any chemical. Install a closed system or local exhaust. Also install safety shower and eye bath.

**Personal protective equipment**
**Respiratory protection:** Half or full facepiece respirator, self-contained breathing apparatus(SCBA), supplied air respirator, etc. Use respirators approved under appropriate government standards and follow local and national regulations.
**Hand protection:** Impervious gloves.
**Eye protection:** Safety goggles. A face-shield, if the situation requires.
**Skin and body protection:** Impervious protective clothing. Protective boots, if the situation requires.

## *9. PHYSICAL AND CHEMICAL PROPERTIES*

**Physical state (20°C):** Liquid
**Form:** Clear
**Colour:** Colorless - Slightly pale yellow
**Odour:** Mild Amine-like
**Odor threshold:** No data available
**Odour threshold:** No data available

| | | | |
|---|---|---|---|
| **Melting point/freezing point:** | -24°C (-11°F) | pH: | No data available |
| **Boiling point/range:** | 202°C (396°F) | **Vapour pressure:** | No data available. |
| **Decomposition temperature:** | No data available | **Vapour density:** | 3.4 |
| **Relative density:** | 1.03 | **Dynamic Viscosity:** | 1.32mPa·s (40°C) |
| **Kinematic viscosity:** | No data available | | |
| **Log Pow:** | No data available | **Evaporation rate(Butyl Acetate=1):** | No data available |
| **Flash point:** | 95°C (203°F) | **Autoignition temperature:** | 270°C (518°F) |
| **Flammability(solid, gas):** | No data available | **Flammability or explosive limits:** | |
| | | **Lower:** | 1% |
| | | **Upper:** | 3.9% |

**Solubility(ies):**
**[Water]** Miscible
**[Other solvents]**
**Miscible:** Ether, Alcohols, Benzene, Acetone, Chloroform, Ethyl acetate

## *10. STABILITY AND REACTIVITY*

**Reactivity:** No data available
**Chemical stability:** Stable under proper conditions.
**Possibility of hazardous reactions:** No special reactivity has been reported.
**Incompatible materials:** Oxidizing agents, Strong acids, Strong bases, Reducing agents
**Hazardous decomposition products:** Carbon dioxide, Carbon monoxide, Nitrogen oxides (NOx)

## *11. TOXICOLOGICAL INFORMATION*

**RTECS Number:** UY5790000

**Acute Toxicity:**
orl-rat LD50:3914 mg/kg
ihl-rat LCLo:1 g/m$^3$
skn-rbt LD50:8 g/kg
ipr-rat LD50:2472 mg/kg

**Skin corrosion/irritation:**
No data available

**Serious eye damage/irritation:**
eye-rbt 100 mg MOD

**Respiratory or skin sensitization:**
No data available

**Germ cell mutagenicity:**
sln-smc 154 mmol/L

**Carcinogenicity:**
orl-mus TDLo:784 g/kg/78W-C

**IARC:** No data available **NTP:** No data available **OSHA:** No data available

**Reproductive toxicity:**
ihl-rat TDLo:116 ppm/6H (multigenerations)
orl-rat TDLo:9700 mg/kg (6-15D preg)

**Target organ(s):**
May cause respiratory irritation.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure: Liver Bone Marrow Nervous System Lung

## *12. ECOLOGICAL INFORMATION*

**Ecotoxicity:**

| | |
|---|---|
| **Fish:** | 96h LC50:832 mg/L (Lepomis macrochirus) |
| **Crustacea:** | No data available |
| **Algae:** | No data available |

| | |
|---|---|
| **Persistence / degradability:** | 73 % (NO2), 94 % (NH3)(by BOD) , 100 % (by GC) , 96 % (by TOC) |
| **Bioaccumulative potential(BCF):** | 3 |
| **Mobility in soil** | |
| **Log Pow:** | -0.40 |
| **Soil adsorption (Koc):** | 4.6 |
| **Henry's Law (PaM$^3$/mol):** | 3.2 x $10^{-4}$ |

## *13. DISPOSAL CONSIDERATIONS*

| | |
|---|---|
| **Disposal of product:** | Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide assistance but does not replace these laws, nor does compliance in accordance with this section ensure regulatory compliance according to the law. US EPA guidelines for Identification and Listing of Hazardous Waste are listed in 40 CFR Parts 261. The product should not be allowed to enter the environment, drains, water ways, or the soil. |
| **Disposal of container:** | Dispose of as unused product. Do not re-use empty containers. |
| **Other considerations:** | Observe all federal, state and local regulations when disposing of the substance. |

## *14. TRANSPORT INFORMATION*

**DOT (US)** Non-hazardous for transportation.

**IATA** Non-hazardous for transportation.

**IMDG** Non-hazardous for transportation.

## *15. REGULATORY INFORMATION*

**Toxic Substance Control Act (TSCA 8b.):**
This product is ON the EPA Toxic Substances Control Act (TSCA) inventory.

**US Federal Regulations**

**CERCLA Hazardous substance and Reportable Quantity:**

| | |
|---|---|
| **SARA 313:** | Listed |
| **SARA 302:** | Not Listed |

**State Regulations**

**State Right-to-Know**

| | |
|---|---|
| **Massachusetts** | Listed |
| **New Jersey** | Listed |
| **Pennsylvania** | Listed |
| **California Proposition 65:** | Listed |

**Other Information**

| **NFPA Rating:** | | **HMIS Classification:** | |
|---|---|---|---|
| **Health:** | 2 | **Health:** | 2 |
| **Flammability:** | 1 | **Flammability:** | 1 |
| **Instability:** | 0 | **Physical:** | 0 |

**International Inventories**

| | |
|---|---|
| **Canada: DSL** | On DSL |
| **EC-No:** | 212-828-1 |

## *16. OTHER INFORMATION*

**Revision date:** 04/08/2019
**Revision number:** 2

TCI chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its affiliates or subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our SDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated SDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.