



OCI Company Ltd.

Material Safety Data Sheet

# MSDS

## Methyl-N 2-Pyrrolidone

### Section 1 - Chemical Product and Company Identification

Substance : Methyl-N 2-Pyrrolidone

Recommended use : Not available

Restriction of use : Not available

Company Identification

Company : OCI Company Ltd.

Address : 94, Sogong-ro, Jung-gu, Seoul, KOREA

Tel No. : 82 - 2 - 727 - 9494

### Section 2 - Hazards Identification

- 1) Hazard Classification
- Skin corrosion/irritation: 2
  - Serious eye damage / Eye irritation: 2
  - Reproductive toxicity : 1B

2) Warning signal

Symbol



Signal word

Danger

Hazard statement

H315 Causes skin irritation

H319 Causes serious eye irritation

H360 May damage fertility or the unborn child

Prevention precautionary statements

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P264 Wash thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P308+p313 IF exposed or concerned: Get medical advice/attention.

P321 Specific treatment (see on this label).

P332+P313 If skin irritation occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.  
P405 Store locked up.  
P501 Dispose of contents/container to the related laws.

3) NFPA

Health Rating	2
Flammability Rating	2
Reactivity Rating	0

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### Section 3 - Composition, Information on Ingredients

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COMPONENT: Methyl-N 2-Pyrrolidone

-CAS No.: 872-50-4

PERCENTAGE: 100%

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### Section 4 - First Aid Measures

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**General information:** Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

**Ingestion:** Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

**Inhalation:** Move to fresh air. Get medical attention if symptoms persist.

**Skin contact:** Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.

**Eye contact:** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

**Most important symptoms/effects, acute and delayed Symptoms:** Irritating to eyes, respiratory system and skin.

**Indication of immediate medical attention and special treatment needed Treatment:** Symptoms may be delayed. Treat symptomatically.

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### Section 5 - Fire Fighting Measures

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**General fire hazards:** In case of fire and/or explosion do not breathe fumes.

**Suitable (and unsuitable) extinguishing media**

**Suitable extinguishing media:** Water spray, foam, dry powder or carbon dioxide.

**Unsuitable extinguishing media:** None known.

**Specific hazards arising from the chemical:** This product is not flammable. May burn, but does not ignite readily.

**Special protective equipment and precautions for firefighters**

**Special fire fighting procedures:** Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

**Special protective equipment for fire-fighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

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### Section 6 - Accidental Release Measures

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**Personal precautions, protective equipment and emergency procedures:** Keep unauthorized personnel away. Ventilate closed spaces before entering them. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Methods and material for containment and cleaning up:** Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

**Notification Procedures:** Inform authorities if large amounts are involved.

**Environmental precautions:** Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

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## Section 7 - Handling and Storage

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**Precautions for safe handling:** Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Do not eat, drink or smoke when using the product. Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed. Store in a well-ventilated place. Store in a dry place.

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## Section 8 - Exposure Controls, Personal Protection

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### Control parameters

#### Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
Methyl-N 2-Pyrrolidone	TWA	10 ppm 40 mg/m <sup>3</sup>	US. AIHA Workplace Environmental Exposure Level (WEEL) Guides (2010)

#### Biological limit values

Chemical identity	Exposure Limit values	Source
Methyl-N 2-Pyrrolidone (5-Hydroxy-N-methyl-2-pyrroli done: Sampling time: End of shift.)	100 mg/l (Urine)	ACGIH BEL (2011)

**Appropriate engineering controls** No data available.

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

**General information:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

**Eye/face protection:** Wear safety glasses with side shields (or goggles).

#### Skin protection

**Hand protection:** Chemical resistant gloves

**Other:** Wear suitable protective clothing.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator. Chemical respirator with organic vapor cartridge.

**Hygiene measures:** Provide eyewash station and safety shower. Always observe good personal hygiene

measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

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## Section 9 - Physical and Chemical Properties

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### Appearance

**Physical state:** Liquid

**Color:** Colorless

**Odor:** Amines

**Odor threshold:** No data available

**pH:** 7.7 ~ 8.0

**Melting point/freezing point:** -24 °C

**Initial boiling point and boiling range:** 202 °C

**Flash Point:** 96 °C (o.c.)

**Evaporation rate:** 0.06 (butyl acetate=1)

**Flammability (solid, gas):** No data available

### Upper/lower limit on flammability or explosive limits

**Flammability limit - upper (%):** 3.9 %(V)

**Flammability limit - lower (%):** 0.99 %(V)

**Explosive limit - upper (%):** No data available.

**Explosive limit - lower (%):** No data available.

**Vapor pressure:** 0.345 mmHg (25 °C)

**Vapor density:** 3.4 (air=1)

**Relative density:** 1.03

### Solubility(ies)

**Solubility in water:** 100 g/100ml (25 °C)

**Solubility (other):** No data available.

**Partition coefficient (n-octanol/water):** -0.54

**Auto-ignition temperature:** 270 °C

**Decomposition temperature:** No data available

**Viscosity:** 1.65 cP (25 °C)

**Molecular weight:** 99.13g/mol

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## Section 10 - Stability and Reactivity

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**Reactivity:** No dangerous reaction known under conditions of normal use.

**Chemical stability:** Material is stable under normal conditions.

**Possibility of hazardous reactions:** Hazardous polymerization does not occur.

**Conditions to avoid:** Excessive heat.

**Incompatible materials:** Strong oxidizing agents. Strong acids. Amines.

**Hazardous decomposition products:** Thermal decomposition may produce oxides of carbon and nitrogen.

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## Section 11 - Toxicological Information

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### Information on likely routes of exposure

**Ingestion:** May be harmful if swallowed.

**Inhalation:** Spray mist may irritate the respiratory system.

**Skin contact:** Causes skin irritation.

**Eye contact:** Causes serious eye irritation.

**Information on toxicological effects**

**Acute toxicity (list all possible routes of exposure)**

**Oral Product:** LD 50 (Mouse): 5,130 mg/kg

LD 50 (Rat): 3,914 mg/kg

**Dermal Product:** LD 50 (Rabbit): 8,000 mg/kg

**Inhalation Product:** No data available.

**Repeated dose toxicity Product:** No data available.

**Skin corrosion/irritation Product:** Causes skin irritation.

**Serious eye damage/eye irritation Product:** Causes serious eye irritation.

**Respiratory or skin sensitization Product:** Not a skin sensitizer.

**Carcinogenicity Product:** This substance has no evidence of carcinogenic properties.

**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

No carcinogenic components identified

**US. National Toxicology Program (NTP) Report on Carcinogens:**

No carcinogenic components identified

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):**

No carcinogenic components identified

**Germ cell mutagenicity**

**In vitro Product:** No mutagenic components identified

**In vivo Product:** No mutagenic components identified

**Reproductive toxicity Product:** May damage fertility or the unborn child.

**Specific target organ toxicity - single exposure Product:** Respiratory tract irritation.

**Specific target organ toxicity - repeated exposure Product:** None known.

**Aspiration hazard Product:** Not classified

**Other effects:** None known.

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**Section 12 - Ecological Information**

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**Ecotoxicity:**

**Fish Product:** LC50 832 mg/ℓ 96 hr.

**Aquatic invertebrates Product:** LC50 1.23 mg/ℓ 48 hr

**Aquatic Plants Product:** EC50 500 mg/ℓ 72 hr

**Persistence and degradability**

**Biodegradation Product:** The product is expected to be biodegradable.

**BOD/COD ratio Product:** BOD5/COD 0.68

**Bioaccumulative potential**

**Bioconcentration factor (BCF) Product:** The product does not contain any substances expected to be bioaccumulating.

**Partition coefficient n-octanol / water (log Kow) Product:** Log Kow: -0.54

**Mobility in soil:** The product is water soluble and may spread in water systems.

**Other adverse effects:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the

environment.

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### Section 13 - Disposal Considerations

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**Disposal instructions:** Discharge, treatment, or disposal may be subject to national, state, or local laws.

**Contaminated packaging:** Since emptied containers retain product residue, follow label warnings even after container is emptied.

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### Section 14 - Transport Information

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UN Number: 1760

Shipping Name: CORROSIVE LIQUID, N.O.S.

Hazard Class: 8

Packing Group: Not applicable

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### Section 15 - Regulatory Information

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#### US federal regulations

##### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

###### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

###### CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

###### Superfund amendments and reauthorization act of 1986 (SARA)

###### Hazard categories

**X Acute (Immediate) X Chronic (Delayed) Fire Reactive Pressure Generating**

###### SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

###### SARA 304 Emergency release notification

None present or none present in regulated quantities.

###### SARA 311/312 Hazardous chemical

Chemical identity	Threshold Planning Quantity
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Methyl-N 2-Pyrrolidone	500 lbs
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###### SARA 313 (TRI reporting)

Chemical identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
Methyl-N 2-Pyrrolidone	10000 lbs	25000 lbs.

###### Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

###### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

#### US state regulations

##### US. California Proposition 65

Methyl-N 2-Pyrrolidone Developmental toxin.

##### US. New Jersey Worker and Community Right-to-Know Act

Methyl-N 2-Pyrrolidone Listed

**US. Massachusetts RTK - Substance List**

Methyl-N 2-Pyrrolidone Listed

**US. Pennsylvania RTK - Hazardous Substances**

Methyl-N 2-Pyrrolidone Listed

**US. Rhode Island RTK**

No ingredient regulated by RI Right-to-Know Law present.

**Inventory Status:**

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

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**Section 16 - Other Information**

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Sources : KOSHA, National Emergency Management Agency

Issue date : 02/03/2017

Last updated date : 08/01/2017

Revision number : 1