



VWR ANALYTICAL

Safety Data Sheet

Revision date: 16 June 2015

Version: 05

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation:	1-Methyl-2-Pyrrolidinone
Product No.:	BDH2022, BDH2037
Other means of identification:	N-Methyl-2-Pyrrolidinone, NMP

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For laboratory and manufacturing use only

1.3. Details of the supplier of the safety data sheet

Company: VWR International, LLC
 Radnor Corporate Center
 100 Matsonford Road
 Radnor, PA 19087-8660

Telephone 610.386.1700

1.4. Emergency Telephone number

CHEMTREC 800.424.9300
 CANUTEC 613.996.6666

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

For the full text of the H-Statement(s) and R-phrases(s) mentioned in this Section, see Section 16.

Hazard statements	Hazard classes and hazard categories
H318	Eye irritation (Category 1)
H360	Reproductive toxicity (Category 1B)
H315	Skin irritation (Category 2)
H335	Specific target organ toxicity, single exposure;-respiratory tract irritation (Category 3)

2.2. GHS Label elements, including precautionary statements

Pictograms:





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Signal word: Danger

Hazard statements	
H227	Combustible liquid
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H360	May damage fertility or the unborn child
Precautionary statements	
P210	Keep away from heat, hot surfaces, sparks, open flames and other sources of ignition. No smoking.
P233	Keep container tightly closed.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors, or in a well-ventilated area.
P280	Wear protective gloves/eye protection/face protection.
P501	Dispose of contents/container in accordance with local, state, and federal regulations.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

2.3. WHMIS Classification:

B3	Flammable and combustible liquid
D2B	Toxic (Eye Irritant)

2.4. Hazards not otherwise classified (HNOC) or not covered by GHS or WHMIS: None

SECTION 3: Composition/information on ingredients

3.1. Hazard components

Chemical name	Formula	Molecular weight	CAS#	Weight%
1-Methyl-2-Pyrrolidinone	C ₈ H ₉ NO	99.13 g/mol	872-50-4	100

SECTION 4: First aid measures

4.1 General information

In case of inhalation: In case of accident by inhalation: remove personnel to fresh air and keep at rest.

In case of skin contact: After contact with skin, wash immediately with plenty of water.

In case of eye contact: In case of contact with eyes, rinse immediately with plenty of water and



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seek medical advice, if necessary.

In case of ingestion: If swallowed, do not induce vomiting; seek medical advice immediately.

4.2. Most important symptoms and effects, both acute and delayed: Burning sensation in eyes, temporary reddening of skin with potential dryness and cracking, Headache, dazed feeling, vomiting, nausea with skin absorption/inhalation

4.3. Indication of any immediate medical attention and special treatment needed: No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2. Special hazards arising from the substance or mixture: No data available

5.3. Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

5.4. Hazardous combustion products: No data available

5.5. Advice for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

5.6. Additional information: No data available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures: Remove all sources of ignition Evacuate personnel to safe areas. Ensure adequate ventilation. Use personal protective equipment. Keep people away from and upwind of spill/leak. See Section 12 for additional Ecological Information.

6.2. Environmental precautions: Prevent further leakage or spillage if safe to do so. Prevent product from entering drains Do not flush into surface water or sanitary sewer system

6.3. Methods and material for containment and cleaning up: Flush area with large quantity of water. Collect onto absorbent material.

6.4. Additional information: For disposal see section 13.



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SECTION 7: Handling and storage

7.1. Precautions for safe handling: Ensure adequate ventilation Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use only in an area containing flameproof equipment. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Use only in area provided with appropriate exhaust ventilation. Wear personal protective equipment. Do not breathe vapors or spray mist

7.2. Conditions for safe storage, including any incompatibilities: Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep containers tightly closed in a cool, well-ventilated place. Containers must be stored in an upright position.

7.3. Specific end use(s): No data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

United States			
Chemical Name	Limit value type & Country of Origin	Exposure Limit value	Source
1-Methyl-2-Pyrrolidinone	TWA-USA	10ppm	WEL
Canada			
Chemical Name	Limit value type & Country of Origin	Exposure Limit value	Source
1-Methyl-2-Pyrrolidinone	TWA-Canada	10ppm	Alberta-OEL

8.2. Exposure controls

Appropriate engineering controls: Ensure adequate ventilation, especially in confined areas.

Personal protection equipment

Eye/face protection: Tightly fitting safety goggles

Skin protection: Protective gloves and antistatic boots. Wear fire/ flame resistant/retardant clothing impervious gloves. Long-sleeved clothing apron.

Respiratory protection: If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn

Hygiene measures: When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.



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SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

- a) Appearance:
Physical state: Liquid
Color: Clear, light yellow
- b) Odor: mild, amine-like
- c) Odor Threshold: No data available
- d) pH: No information available
- e) Melting point/freezing point: No data available/-24.4°C
Initial boiling point: 202°C
- f) boiling range: No data available
- g) Flash point: 91°C
- h) Evaporation rate: No data available
- i) Flammability (solid, gas): No data available
- j) Upper/lower flammability: 9.5% (V)/1.3% (V)
explosive limits: No data available
- k) Vapor pressure: 0.24mmHg
- l) Vapor density: 3.4
- m) Relative density: 1.03gm/mL
- n) Solubilities: Miscible in all proportions
- o) Partition coefficient (n-Octanol/Water): $\log P_{ow}$: -0.46
- p) Auto-ignition temperature: 245°C
- q) Decomposition temperature: >300°C
- r) Viscosity: No information available
- s) Explosive properties: No data available
- t) Oxidizing properties: No data available

9.2. Other information: No data available

SECTION 10: Stability and Reactivity

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

10.2. Chemical stability: Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions: Vapors may form explosive mixtures with air.

10.4. Conditions to avoid: Excessive heat & temperatures

10.5. Incompatible materials: Strong oxidizing agents, strong acids & bases.

10.6. Hazardous decomposition products: Fire or mixing with incompatible materials may produce oxides of carbon and other toxic or irritating fumes.



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SECTION 11: Toxicology

11.1. Information on toxicological effects

Acute toxicity

Oral LD₅₀: 4150 mg/kg (Rat)

Inhalation LC₅₀: >5.1mg/L (4h, Rat)

Dermal LD₅₀: >5000 mg/kg (Rabbit)

Other information on acute toxicity: No data available

Skin corrosion/irritation: May cause irritation with redness and pain. May be absorbed through skin with possible systemic effects.

Serious eye damage/eye irritation: Causes eye irritation

Respiratory or skin sensitization: Inhalation of vapors in high concentration may cause irritation of respiratory system. Exposure to high concentrations has a narcotic effect, producing symptoms of dizziness, drowsiness, headache, staggering, unconsciousness and possibly death.

Germ cell mutagenicity: In vivo tests did not show mutagenic effects

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Presumed human reproductive toxicant.

Effects on fertility

Test Type: Two generation study

Species: Rat (Male and Female)

Application Route: Oral

Dose(s) 0, 50, 160, 350, 500 mg/kg Bodyweight

General Toxicity: Parent, NOAEL: 350 mg/kg

General Toxicity: F1: NOAEL: 160mg/kg

Symptoms: Fetal effects: Reduced embryonic survival

Method: OECD Test Guideline 415

Results: Embryotoxic effects and adverse effects on the offspring were detected

GLP: Yes

Effects on fetal development

Species: Rat (Female)

Application Route: Oral



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Dose(s) 0, 125, 250, 500, 750 mg/kg Bodyweight
Duration of single Treatment 0 Days

Specific target organ toxicity-single exposure: Central nervous system

Specific target organ toxicity-repeated exposure: No data available

Aspiration hazard: No data available

Additional information: Inhalation of vapors may cause drowsiness or dizziness

SECTION 12: Ecological information

12.1. Ecotoxicity:

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to Daphnia and other aquatic invertebrates
1-Methyl-2-Pyrrolidinone	EC ₅₀ : >100 mg/L (72h) Desmodesmus subcapicatus	LC ₅₀ : >100 mg/L (96h) Oncorhynchus mykiss (Rainbow Trout)	IC ₅₀ : >100 mg/L (24h) Daphnia magna

12.2. Persistence and degradability: No data available

12.3. Bioaccumulative potential:

Chemical name	log P _{ow}
1-Methyl-2-Pyrrolidinone	-0.38

12.4. Mobility in soil: No data available

12.5. Results of PBT and vPvB assessment: No data available

12.6. Other adverse effects: No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods: Dispose in accordance with local regulations.

Contaminated packaging: Dispose of as unused product.



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SECTION 14: Transport information

Land Transport DOT (U.S.)

Not regulated as a dangerous good

Sea Transport IMDG

Not regulated as a dangerous good

Transportation of Dangerous Goods (TDG)

Not regulated as a dangerous good

Air Transport IATA

Not regulated as a dangerous good

SECTION 15: Regulatory information

WHMIS Classification: Flammable liquid, Toxic

OSHA Hazards: Combustible liquid, Mild eye, skin, and respiratory irritant

SARA 302 Extremely Hazardous Substances: SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 (TRI reporting): This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Components	CAS No.:
1-Methyl-2-Pyrrolidinone	872-50-4

SARA 311/312 Hazardous Chemicals: None identified

Massachusetts Right-To-Know Substance List:

Components	CAS No.:
1-Methyl-2-Pyrrolidinone	872-50-4

Pennsylvania Right-To-Know Hazardous substances:

Components	CAS No.:
1-Methyl-2-Pyrrolidinone	872-50-4

New Jersey Worker and Community Right-To-Know Components:

Components	CAS No.:
1-Methyl-2-Pyrrolidinone	872-50-4



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California Proposition 65: WARNING! This product contains a chemical known to the State Of California to cause birth defects or other reproductive harm.

Components	CAS No.:
1-Methyl-2-Pyrrolidinone	872-50-4

Inventory status:

- U.S. TSCA Inventory list
- Canada DSL/NDSL Inventory list

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

SECTION 16: Other information

Full text of H-Statement(s) and P-phrase(s):

- H227 Combustible liquid
- H315 Causes skin irritation
- H319 Causes serious eye irritation
- H335 May cause respiratory irritation
- H360 May damage fertility or the unborn child
- P210 Keep away from heat, hot surfaces, sparks, open flames and other sources of ignition. No smoking.
- P233 Keep container tightly closed.
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
- P264 Wash skin thoroughly after handling.
- P271 Use only outdoors, or in a well-ventilated area.
- P280 Wear protective gloves/eye protection/face protection.
- P501 Dispose of contents/container in accordance with local, state, and federal regulations.
- P308 + P313 IF exposed or concerned: Get medical advice/attention.

HMIS Rating:

- Health:** 2
- Flammability:** 2
- Physical Hazard:** 0
- Reactivity:** 0

NFPA Rating:

- Health:** 2
- Flammability:** 2
- Reactivity:** 0
- Special Hazard:** N/A



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DISCLAIMER

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. VWR International, LLC and its affiliates shall not be held liable for any damage resulting from handling.