



1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name: 1 Methyl-2-pyrrolidinone
Product Number: PN000798
CAS-No.: 872-50-4

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

Identified uses: Laboratory chemical/reagent

1.3 Details of the supplier of the safety data sheet

Company: Associates of Cape Cod, Inc.
124 Bernard E St Jean Drive
East Falmouth, MA 02536
USA

Telephone: +1 888-395-2221
+1 508-540-3444

1.4 Emergency telephone number

Emergency Phone #: (800) 424-9300 Chemtrec[®] Domestic North America
(703) 527-3887 Chemtrec[®] International

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

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

Skin irritation (Category 2)
Eye irritation (Category 2A)
Reproductive toxicity (Category 1B)
Specific target organ toxicity single exposure (Category 3), Respiratory system

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statements

- Causes skin irritation.
- Causes serious eye irritation.
- May cause respiratory irritation.
- May damage fertility or the unborn child.

Precautionary statements

- Obtain special instruction before use.



- Do not handle until all safety precautions have been read and understood.
- Avoid breathing fume/ gas/ mist/ vapors/ spray.
- Wash skin thoroughly after handling.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves/ protective clothing/ eye protection/ face protection.
- IF ON SKIN: Wash with plenty of soap and water.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician 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 exposed or concerned: Get medical advice/ attention.
- If skin irritation occurs: Get medical advice/ attention.
- If eye irritation persists: Get medical advice/attention.
- Take off contaminated clothing and wash before reuse.
- In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
- Store in a well-ventilated place. Keep container tightly closed.
- Store in a well-ventilated place. Keep cool.
- Store locked up.
- Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - None

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Substances

Chemical characterization: Natural Product
 Synonyms: N-Methyl-2-pyrrolidone
 1-Methyl-2-pyrrolidone
 NMP
 Formula: C₅H₉NO
 Molecular Weight: 99.13 g/mol
 CAS-No.: 872-50-4
 EC-No.: 212-828-1
 Index-No.: 606-021-00-7

Hazardous components

Component	Classification	Concentration
N-methyl-2-pyrrolidone	Skin Irrit. 2; Eye Irrit. 2A; Repr. 1B; Respiratory 3	<=19%

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.



In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Thermal decomposition: Carbon oxides, Nitrogen oxides (NOx)

5.3 Advice for firefighters

Wear self-contained breathing apparatus for fire-fighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Contain spillage and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.



7. HANDLING AND STORAGE

7.1 Precautions for safe handling – use Personal Protective Equipment

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Store under inert gas. Moisture sensitive.

Storage class (TRGS510): Non-combustible, acute toxic Cat. 3/toxic hazardous materials or hazardous materials causing chronic effects.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure Guidelines

Component	CAS-No.	Value	Control Parameters	Basis
N-methyl-2-pyrrolidone	872-50-4	TWA	10.000000 ppm	USA. Workplace Environmental Exposure Levels (WEEL)
	Remarks	Skin		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological Specimen	Basis
N-methyl-2-pyrrolidone	872-50-4	5-Hydroxy-N-methyl-2-	100.00 00 mg/L	Urine	ACGIH-Biological Exposure Indices (BEI)

8.2 Exposure controls

Personal protective equipment

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: butyl-rubber; Minimum layer thickness: 0.3mm

Splash contact

Material: Nature latex/chloroprene; Minimum layer thickness: 0.6mm

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.



Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use, a full-face respirator with multi-purpose combination (US) or type ABEK (EN14387) respirator cartridges as a back up to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and Components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance:	Form: liquid Color: colorless
b) Odor:	No data available
c) Odor Threshold:	No data available
d) pH:	7.7-8
e) Melting point/freezing point	Melting point/range: -24°C (-11°F)- lit.
f) Initial boiling point and boiling range	202°C (396°F)-lit.
g) Flash point	108°C closed cup
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	Upper explosion limit: 9.5% (V) Lower explosion limit: 1.3% (V)
k) Vapor pressure	0.39-0.43h Pa (0.29-0.32mm Hg) at 20°C (68°F) 1.32 h PA (0.99mm Hg) at 40°C (104°F)
l) Vapor density	3.42 -(Air=1.10)
m) Relative density	1.028 g/cm 3 at 25°C (77°F)
n) Water solubility	No data available
o) Partition coefficient: n-octanol/water	log Pow: -0.46
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

9.2 Other safety information

Surface tension 40.7m N/m

Relative vapor density

3.42- (Air=1.0)



10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Vapors may form explosive mixture with air.

10.4 Incompatible materials

Strong acids, Strong oxidizing agents, strong reducing agents.

10.5 Hazardous decomposition products

Other decomposition products-no data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Symptoms – no information available

11.2 Information on toxicological effects

Acute toxicity

LD 50 Oral-Rat-3, 914 mg/kg

LDLO Inhalation-Rat-4h->5100 ppm

LD50 Dermal-Rabbit-8,000 mg/kg

Skin corrosion/irritation

Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Serious eye damage/eye irritation

Eyes-Rabbit

Result: Eye irritation

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is Identified as probable, possible or confirmed human 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.



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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

Damage to fetus possible

Specific target organ toxicity - single exposure

Inhalation-May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: UY5790000

Prolonged or repeated exposure can cause: Vomiting, Diarrhea, Abdominal pain, Rats exposed to 1-methyl-2-pyrrolidone at a concentration of 1 mg/Lasan aerosol for 10 days showed depletion of hematopoietic cells in the bone marrow and atrophy of the lymphoid tissues of the thymus, spleen, and lymph nodes.

Bone marrow-Irregularities-Based on Human Evidence

Bone marrow-Irregularities-Based on Human Evidence

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish

LC50-other fish - 4,000 mg/l-96h

LC50-Leuciscusidus (Golden orfe) - >500 mg/l -96 h

Toxicity to other aquatic invertebrates

LC50-Bacteria->9,000 mg/l

12.2 Persistence and degradability

Biodegradability

Result: 90%-Readily biodegradable

12.3 Bio-accumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available



13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

This combustible material may be burned in a chemical incinerator equipped with an after burner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

Not Regulated for Transport

IMDG

No dangerous goods

IATA

No dangerous goods

15. REGULATORY INFORMATION

REACH No. :

SARA 302 Components

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

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:
N-methyl-2-pyrrolidone

SARA 311/312 Hazards

Fire Hazard, Chronic Health Hazard, Irritant

Massachusetts Right to Know Components

	CAS-No.	Revision Data
N-methyl-2-pyrrolidone	872-50-4	7/1/2007

Pennsylvania Right to Know Components

	CAS-No.	Revision Date
N-methyl-2-pyrrolidone	872-50-4	7/1/2007

New Jersey Right to Know Components

	CAS-No.	Revision Date
N-methyl-2-pyrrolidone	872-50-4	7/1/2007

California Prop. 65 Components

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

	CAS-No.	Revision Date
N-methyl-2-pyrrolidone	872-50-4	2/1/2009



16. OTHER INFORMATION

HMIS Rating

Health Hazard: 2

Flammability: 1

Physical Hazard: 0

NFPA Rating

Health Hazard: 2

Fire Hazard: 1

Reactivity Hazard: 1

Further information

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Preparation Information

Associates of Cape Cod, Inc.

Version: 3

SDS 1-Methyl-2-pyrrolidinone