SAFETY DATA SHEET

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

1.1 Product identifiers

Product name	1-Methyl-2-pyrrolidinone
CAS number	872-50-4
Synonyms	1-Methyl-2-pyrrolidone; N-Methylpyrrolidone; NMP

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

Identified uses	Laboratory chemicals.

1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Flammable Liquids	Category 4
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Reproductive Toxicity	Category 1B
Specific Target Organ Toxicity (single exposure)	Category 3
Target Organ(s) - Respiratory system	

Specific Target Organ Toxicity (repeated exposure)	Category 2
Target Organ(s) - Kidney, Liver, Spleen, Blood	

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word: Danger

Hazard statements:
Combustible liquid.
Causes skin irritation.
Causes serious eye irritation.
May cause respiratory irritation.
May damage the unborn child.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wash face, hands, and any exposed skin thoroughly after handling. Wear eye/face protection. Do not breathe 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.

Response: IF exposed or concerned, get medical attention/advice.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention. Take off contaminated clothing and wash before reuse.

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.

Fire: In case of fire, use CO_2, dry chemical, or foam for extinction.

Storage: Store locked up. Store in a well-ventilated place. Keep container tightly closed.

Disposal: Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

WARNING: Reproductive Harm - https://www.p65warnings.ca.gov/.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
1-Methyl-2-pyrrolidinone	1-Methyl-2-pyrrolidone; N-Methylpyrrolidone; NMP	872-50-4	<=100%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

In case of skin contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

In case of eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

If swallowed Do NOT induce vomiting. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms of overexposure may be headache, dizziness, tiredness, nausea, and vomiting. Central nervous system disorders. May damage the unborn child.

4.3 Indication of any immediate medical attention and special treatment needed

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance. Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media Water spray, Carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Water mist maybe used to cool closed containers.

Unsuitable extinguishing media No information available.

5.2 Specific hazards arising from the substance or mixture

Combustible material. Containers may explode when heated. Keep product and empty container away from heat and sources of ignition.
Hazardous Combustion Products: Carbon monoxide (CO). Carbon dioxide (CO2). Nitrogen oxides (NOx). Peroxides.

5.3 Special protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

5.4 Further information

Flash Point 91 °C / 195.8 °F

Autoignition Temperature 346 °C / 654.8 °F

Explosion limits

Upper 9.5 vol %
Lower 1.3 vol %

Sensitivity to Mechanical Impact No information available.
Sensitivity to Static Discharge No information available.

NFPA

Health	Flammability	Instability	Physical hazards
2	2	1	N/A

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Not to be used by pregnant workers and workers who have recently given birth or who are breastfeeding. Ensure adequate ventilation. Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges.

6.2 Environmental precautions

Should not be released into the environment.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition.

6.4 Reference to other sections

See Section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling
Do not get in eyes, on skin, or on clothing. Not to be used by pregnant workers and workers who have recently given birth or who are breastfeeding. Wear personal protective equipment/face protection. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed, seek immediate medical assistance. Keep away from open flames, hot surfaces, and sources of ignition.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Keep containers tightly closed in a dry, cool, and well-ventilated place. Keep away from heat, sparks, and flame. Protect from light.

Incompatibilities
Strong oxidizing agents. Strong acids. Strong bases.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits
No information available.

8.2 Exposure controls

Appropriate engineering controls
Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin protection
Wear appropriate protective gloves and clothing to prevent skin exposure.

Body Protection
Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory protection
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Control of environmental exposure
No information available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	Mild amine
Odor Threshold	No information available
pH	7.7-8.0 (100 g/L aq.sol)
Melting Point/Range	-24 °C / -11.2 °F
Boiling Point/Range	202 °C / 395.6 °F @ 760 mmHg
Evaporation Rate	No information available
Flammability (solid)	Not applicable
Flammability or explosive limit	
Upper	9.50%
Lower	1.30%
Vapor Pressure	0.7 mbar @ 25 °C
Vapor Density	3.4
Density	1.028 g/mL
Solubility	Miscible
Partition coefficient; n-octanol/water	-0.46
Autoignition Temp	346 °C / 654.8 °F
Decomposition Temp	No information available
Viscosity	1.67 mPa s at 20 °C
Molecular Formula	C5 H9 N O
Molecular Weight	99.13 g/mol
VOC Content(%)	No information available
Oxidizing properties	No information available

9.2 Other safety information
No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity
No information available.

10.2 Chemical stability
Hygroscopic. Air sensitive. Light sensitive..

10.3 Possibility of hazardous reactions
None under normal processing.

10.4 Conditions to avoid
Incompatible products. Heat, flames, and sparks. Exposure to air. Exposure to moist air or water. Exposure to light. Keep away from open flames, hot surfaces, and sources of ignition.

10.5 Incompatible materials
Materials Strong oxidizing agents, Strong acids, Strong bases.

10.6 Hazardous decomposition products
Carbon monoxide (CO), Carbon dioxide (CO2), Nitrogen oxides (NOx), peroxides.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
1-Methyl-2-pyrrolidone	3914 mg/kg (Rat)	8 g/kg (Rabbit)	> 5.1 mg/L (Rat) 4h

Skin corrosion/irritation
Irritating to skin.

Serious eye damage/eye irritation
Irritating to eyes.

Respiratory or skin sensitization
Irritating to respiratory system.

Germ cell mutagenicity
Mutagenic effects have occured in microorganisms.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
1-Methyl-2-pyrrolidone	872-50-4	Not listed	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure
Respiratory system.

Specific target organ toxicity - repeated exposure
Kidney, Liver, Spleen, Blood.

Reproductive toxicity
Experiments have shown reproductive toxicity effects on laboratory animals. Substances known to cause developmental toxicity in humans. May cause harm to the unborn child. Teratogenic effects have occurred in experimental animals.

Chronic effects
Symptoms of overexposure may be headache, dizziness, tiredness, nausea, and vomiting. Central nervous system disorders.

11.2 Additional Information
Tumorigenic effects have been reported in experimental animals.

SECTION 12: Ecological information

12.1 Toxicity

Product		Species	Test Results
1-Methyl-2-pyrrolidone	EC50	Desmodesmus subspicatus	> 500 mg/L, 72h
	LC50	Poecilia reticulata	1400 mg/L, 96h static
	LC50	Pimephales promelas	1072 mg/L, 96h static
	LC50	Lepomis macrochirus	832 mg/L, 96h static
	EC50	Daphnia magna	4897 mg/L, 48h

12.2 Persistence and degradability
Persistence is unlikely.

12.3 Bio accumulative potential
No information available.

12.4 Mobility in soil
Will likely be mobile in the environment due to its water solubility.

12.5 Results of PBT and vPvB assessment
No information available.

12.6 Endocrine disrupting properties
No information available.

12.7 Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

DOT (US)

UN-No	NA1993
Proper Shipping Name	Combustible liquid, n.o.s.
Hazard Class	Combustible Liquid
Packing Group	III

IMDG Not regulated.

IATA Not regulated.

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Listed, 1-Methyl-2-pyrrolidone (CAS #872-50-4): Section 5 & 6.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

SARA 304 Emergency release notification
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous
See Section 2 for more information.

SARA 313 (TRI reporting)
Listed, 1-Methyl-2-pyrrolidone (CAS #872-50-4).

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

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

Not regulated.

Safe Drinking Water Act

Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not listed.

US state regulations

US. Massachusetts RTK - Substance List

Listed, 1-Methyl-2-pyrrolidone (CAS #872-50-4).

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

Listed, 1-Methyl-2-pyrrolidone (CAS #872-50-4).

US. Pennsylvania Worker and Community Right-to-Know Law

Listed, 1-Methyl-2-pyrrolidone (CAS #872-50-4).

California Proposition 65

Listed, 1-Methyl-2-pyrrolidone (CAS #872-50-4).

SECTION 16: Other information

Issue date: 11/27/2023
Revision 1: 01/09/2025

SECTION 17: Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.