

Safety Data Sheet

N-METHYL PYRROLIDONE

Version 1.6

Revision Date: 11/11/2023

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : N-METHYL PYRROLIDONE

Recommended use of the chemical and restrictions on use

Recommended use : Industrial chemical
Solvent

Manufacturer or supplier's details

Company : Univar Solutions USA
Address : 3075 Highland Pkwy Suite 200
Downers Grove, IL 60515
United States of America (USA)

Emergency telephone number:

Transport North America: CHEMTREC (1-800-424-9300)

CHEMTREC INTERNATIONAL Tel # 703-527-3887

Additional Information: : Responsible Party: Product Compliance Department
E-mail: SDSNA@univarsolutions.com
SDS Requests: 1-855-429-2661
Website: www.univarsolutions.com

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 4
Skin irritation : Category 2
Eye irritation : Category 2A
Reproductive toxicity : Category 1B
Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

GHS label elements

Hazard pictograms :



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 : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.

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P210 Keep away from heat/ sparks/ open flames/ hot surfaces.
No smoking.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
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.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Hazardous components

CAS-No.	Chemical name	Weight percent
872-50-4	1-Methyl-2-pyrrolidone	90 - 100

Any Concentration shown as a range is due to batch variation.

Molecular formula : C₅H₉NO
Synonyms : N-METHYL-2-PYRROLIDONE; 1-METHYL-2-PYRROLIDONE; N-METHYL PYRROLIDONE; NMP,

SECTION 4. FIRST AID MEASURES

General advice : Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

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If inhaled	: If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of skin contact	: If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
In case of eye contact	: Immediately flush eye(s) with plenty of water. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	: Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Keep respiratory tract clear. Take victim immediately to hospital.
Notes to physician	: Treat symptomatically

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Dry chemical Water spray Foam Carbon dioxide (CO ₂)
Unsuitable extinguishing media	: High volume water jet
Specific hazards during fire-fighting	: Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	: Carbon oxides Nitrogen oxides (NO _x)
Specific extinguishing methods	: Use a water spray to cool fully closed containers.
Further information	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments.
Special protective equipment for firefighters	: Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment.
Environmental precautions	: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for	: Contain spillage, and then collect with non-combustible ab-

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containment and cleaning up : sorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material. Keep away from open flames, hot surfaces and sources of ignition.

Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : No smoking.
Keep container tightly closed in a dry and well-ventilated place.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

Storage period : 24 Months

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

CAS-No.	Components	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
872-50-4	1-Methyl-2-pyrrolidone	TWA	10 ppm	US WEEL

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.
In the case of vapour formation use a respirator with an approved filter.

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid
Colour : clear, colourless
Odour : mild, amine-like, ammoniacal
Odour Threshold : No data available
pH : 8.5 - 10 @ 100 g/l @ 20 °C (68 °F)

Freezing Point (Melting point/range) : -23.6 °C (-10.5 °F)
(1013 hPa)

Boiling Point (Boiling point/boiling range) : 204.3 °C (399.7 °F)
(1013 hPa)

Flash point : 91 °C (196 °F)
Method: DIN 51758, closed cup

Evaporation rate : No data available
Flammability (solid, gas) : No data available
Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : 0.32 hPa @ 20 °C (68 °F)

Relative vapour density : > 1 @ 20 °C (68 °F)
(Air = 1.0)

Relative density : 1.03 @ 20 °C (68 °F)
Reference substance: (water = 1)

Density : 1.03 g/cm³ @ 25 °C (77 °F)
Method: DIN 51757

Solubility(ies)
Water solubility : Miscible
Solubility in other solvents : completely miscible
Solvent: organic solvents

Partition coefficient: n-octanol/water : log Pow: -0.46 @ 25 °C (77 °F)
Method: OECD Test Guideline 107

Auto-ignition temperature : 251 °C
Thermal decomposition : 365 °C

Viscosity
Viscosity, dynamic : 1.661 mPa.s @ 25 °C (77 °F)

Oxidizing properties : The substance or mixture is not classified as oxidizing.

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SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No hazards to be specially mentioned.
Conditions to avoid	: Keep away from heat, flame, sparks and other ignition sources. Exposure to moisture
Incompatible materials	: Strong oxidizing agents Strong acids Bases Strong reducing agents Humid air
Hazardous decomposition products	: carbon dioxide and carbon monoxide nitrogen oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Skin corrosion/irritation

Components:

872-50-4:

Species: Rabbit

Result: Irritating to skin.

Serious eye damage/eye irritation

Components:

872-50-4:

Species: Rabbit

Result: Irritating to eyes.

Germ cell mutagenicity

Components:

872-50-4:

Germ cell mutagenicity - Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity

Components:

872-50-4:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

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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.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
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.

Reproductive toxicity

Components:

872-50-4:

Effects on fertility	: Test Type: Two-generation study Species: Rat, male and female Application Route: oral Dose: 0, 50, 160, 500/350 mg/kg bw/ General Toxicity - Parent: NOAEL: 350 mg/kg bw General Toxicity F1: NOAEL: 160 mg/kg bw Symptoms: Fetal effects Reduced embryonic survival Result: Embryotoxic effects and adverse effects on the off-spring were detected.
Effects on foetal development	: Species: Rat Application Route: oral Dose: 0, 125, 250, 500, 750 mg/kg b Duration of Single Treatment: 10 d General Toxicity Maternal: NOAEL: 125 mg/kg bw Teratogenicity: NOAEL: 250 mg/kg bw Embryo-foetal toxicity: NOAEL: 125 mg/kg Symptoms: Skeletal malformations, Visceral malformations, Reduced number of viable fetuses Result: Teratogenic effects, Developmental toxicity occurred at maternal toxicity dose levels
Teratogenicity - Assessment	: Clear evidence of adverse effects on development, based on animal experiments.

STOT - single exposure

Components:

872-50-4:

Target Organs: Nose
Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Aspiration toxicity

Product:

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No aspiration toxicity classification

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

DOT (Department of Transportation):

NA1993, Combustible liquid, n.o.s., (1-METHYL-2-PYRROLIDONE), CBL, III

IATA (International Air Transport Association): Not regulated as a dangerous good

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IMDG-Code: Not regulated as a dangerous good

Special Notes: : The flash point for this material is greater than 100 F (38 C). Therefore, in accordance with 49 CFR 173.150(f) non-bulk containers (<450L or <119 gallon capacity) of this material may be shipped as non-regulated when transported solely by land, as long as the material is not a hazardous waste, a marine pollutant, or specifically listed as a hazardous substance.

SECTION 15. REGULATORY INFORMATION

WHMIS Classification : B3: Combustible Liquid
D2A: Very Toxic Material Causing Other Toxic Effects
D2B: Toxic Material Causing Other Toxic Effects

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Skin corrosion or irritation
Serious eye damage or eye irritation
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)

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

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

872-50-4 1-Methyl-2-pyrrolidone

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

Massachusetts Right To Know

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872-50-4 1-Methyl-2-pyrrolidone

Pennsylvania Right To Know

872-50-4 1-Methyl-2-pyrrolidone

California Prop 65

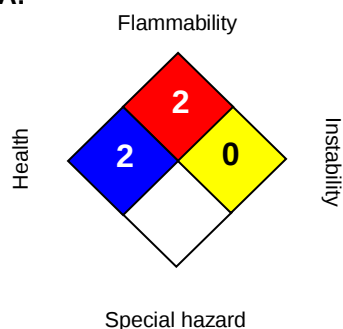
⚠ WARNING: This product can expose you to chemicals including 1-Methyl-2-pyrrolidone, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The components of this product are reported in the following inventories:

TSCA	: On TSCA Inventory
DSL	: All components of this product are on the Canadian DSL
AICS	: On the inventory, or in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	2*
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Univar Solutions Product Compliance Department (1-855-429-2661)

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SDSNA@univarsolutions.com.

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Legacy SDS: : R0003954

Material number:

16209355, 16206657, 16192024, 16189169, 16119472, 16188290, 16123852, 16056629, 16176687, 16177876, 16168307, 16144621, 16141347, 16156799, 16144334, 16165234, 16159159, 16157730, 16135476, 16143351, 16143301, 16143298, 16142611, 16140274, 16142065, 16148894, 16120467, 16118415, 16118095, 16109064, 16108393, 16104821, 16083779, 16056628, 16056627, 16062165, 16052616, 72970, 732504, 16035296, 16024509, 780310, 769857, 769358, 72989, 105751, 88420, 20438, 547044, 547043, 105732, 150951, 71289, 105889, 56750, 144348, 139248, 20440, 20439, 712753, 643520, 73488, 621148, 612623, 104048, 554342, 554151, 104965, 136401, 506704, 502673, 501516

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials

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			Information System
LC50	Lethal Concentration 50%		