

Safety data sheet

N-methyl-2-pyrrolidone

Version 1.1

Effective date: 08-06-2022



SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier.

Substance name: N-methyl-2-pyrrolidone
(1-methyl-2-pyrrolidone)
EC-No.: 212-828-1
CAS-No.: 872-50-4

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

Product use: Professional use.
Electronics chemical.

1.3 Details of the supplier of the safety data sheet

Company: Sunchem AB
Box 69
S-433 21 Partille
Sverige
T +46 31 44 73 10
F +46 31 44 95 81
www.sunchem.se

Contact: info@sunco.se

1.4 Emergency telephone number:

Use your national or local emergency number.
United Kingdom: Contact The National Poisons Information Service (dial 111, 24 h service).

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture according to CLP No. 1272/2008/GB CLP. Skin Irrit. 2; H315, Eye Irrit. 2; H319, STOT SE 3; H335, Repr. 1B; H360D.

Specific concentration limits: (10 ≤ C ≤ 100 %) STOT SE 3, H335.

Endocrine disrupting effect may be present since the product is classified H360D.

2.2 Label elements CLP No. 1272/2008/GB CLP.

Hazard pictograms:

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Signal word:

Danger

Hazard statements:

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H360D May damage the unborn child.

Precautionary statements:

General:

-

Prevention:

P201 Obtain special instructions before use.

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

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P263 Avoid contact during pregnancy and while nursing.

P280 Wear protective gloves/protective clothing/eye protection/face protection P281

Use personal protective equipment as required.

Response:

P308 + 313 IF exposed or concerned: Get medical advice/attention.

Storage:

-

Disposal:

P501 Dispose of contents/ container in accordance with national regulations.

Additional labelling:

-

2.3 Other hazards.

This mixture does not meet the criteria for PBT or vPvB according to regulation 1907/2006 REACH, annex XIII.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance:

CAS/EC-no.	REACH-no.	Name	Content %	Classification CLP
872-50-4 / 212-828-1	01- 211947243046	N-methyl-2-pyrrolidone SVHC*	100	Skin Irrit. 2; H315, Eye Irrit. 2; H319, STOT SE 3; H335, Repr. 1B; H360D.

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*Substance is an SVHC substance according to ECHA.

Specific concentration limits: (10 ≤ C ≤ 100 %) STOT SE 3, H335.

See full text of H-phrases in section 16. Occupational limits, where applicable, are listed in section 8.

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

General information:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a Poison Centre or doctor if you feel unwell.
Inhalation:	Call a Poison Centre or doctor if you feel unwell. Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Skin contact:	Wash with plenty of soap and water. Take off immediately all contaminated clothing. Get medical attention if irritation develops.
Eye contact:	Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Check for and remove any contact lenses. Get medical attention immediately.
Ingestion:	Do NOT induce vomiting. Get medical attention immediately. Rinse nose, mouth and throat with water. Drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed:

Symptoms/effects after inhalation: May damage the unborn child.
Symptoms/effects after inhalation: May cause respiratory irritation.
Symptoms/effects after skin contact: Causes skin irritation.
Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects after swallowing: Ingestion may cause nausea, vomiting and diarrhea.

4.3 Indication of any immediate medical attention and special treatment needed:

Treat symptomatically.

SECTION 5. FIRE FIGHTING MEASURES

5.1 Extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

Extinguishing media which must not be used for safety reasons:

Water jets should not be used, since they can spread the fire.

5.2 Special hazards arising from the substance or mixture:

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Not flammable.

In case of fire can toxic gases be formed: carbon monoxide (CO, CO₂).

5.3 Advice for firefighters:

Do not enter fire area without proper protective equipment, including respiratory protection. Use water spray to keep fire-exposed containers cool.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

See section 8 for recommendations on the use of personal protective equipment. Avoid contact with skin, eyes and clothes. Keep unprotected persons away. Ensure adequate ventilation, especially in confined areas. Do not breathe vapor or mist.

6.2 Environmental precautions:

Prevent entry to sewers and public waters.

6.3 Methods and material for containment and cleaning up:

Small spills: wipe up with absorbent material (e.g. cloth, fleece).

Large spills: Use sand, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in suitable closed container for disposal, according to local regulations. Never return spills to original containers for re-use. Then rinse the spillage site with plenty of water. Dispose of in accordance with section 13.

6.4 Reference to other sections:

See section 8 for personal protection.

See section 13 for disposal.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling:

See section 8 for recommendations on the use of personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapor/mist. Provide adequate ventilation of the work area. Open container carefully. Avoid contact during pregnancy and while nursing. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash hands and other exposed parts with mild soap and water before eating, drinking, smoking or leaving the workplace. Use only outdoors or in a well-ventilated area.

Hygiene measures:

Do not eat, drink or smoke when using this product. Wash face, hands and any exposed skin thoroughly after handling. Wash contaminated clothing before reuse.

7.2 Conditions for safe storage, including any incompatibilities:

Store in original container protected from direct sunlight in a dry, cool and well-ventilated area. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Protect from direct sunlight.

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Store away from: Strong alkali compounds. Strong acids. Oxidizing agents.
Substance is hygroscopic.

7.3 Specific end use(s): See section 1.2.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limits EH40:

CAS-no:	Name:	Limits 8 h:	Limits 15 min.:	Ref./comments:
7872-50-4	N-methyl-2-pyrrolidone	10 ppm 40 mg/m	20 ppm 80 mg/m	EH40/Sk

Sk: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.

N-metyl-2-pyrrolidon (872-50-4)		Derived No Effect Level (DNEL)	
Application Area	Routes of exposure	Health effect	Value
Workers	Skin Contact	Long-term systemic effects	4,8mg/kg body weight/d
Workers	Inhalation	Long-term systemic effects	14,4 mg/m ³

8.2 Exposure controls.

Appropriate technical measures:

Airborne concentrations must be kept as low as possible. Use for example an exhaust system if the normal air flow in the work room is not sufficient.

General information:

Smoking, consumption of food or liquid, and storage of tobacco, food or liquid, are not allowed in the workroom. Always wash hands, forearms and face. Make sure that eyewash and emergency showers are clearly marked and available. Avoid contact with skin and eyes. Avoid breathing mist/vapors.

Personal protective equipment:

Only CE-marked personal protection equipment should be used.

Respiratory protection:

In case of inadequate ventilation, use respiratory protection with filter B – EN 149:2001 + A1:2009.

Hand protection:

Wear suitable protective gloves. Butyl rubber.
(>30 minutes). Thickness: >0.4 mm. STANDARD EN 374.

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Eye protection: Tightly fitting safety goggles. EN 166.

Body protection: Impervious working clothes.

Measures to avoid environmental exposure:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties.

Physical state:	Liquid
Colour:	Colorless
Odour:	Weak
Melting point/freezing point:	202°C
Boiling point:	Not flammable
Flammability:	No hazard
Lower and upper explosion limit:	96°C – open cup
Flash point:	270°C
Auto-ignition temperature: Decomposition temperature:	Not relevant/no data
pH:	7.8 - 8
Dynamic viscosity:	Not relevant/no data
Solubility:	Not relevant/no data
Partition coefficient n-octanol/water:	Not relevant/no data
Vapour pressure:	0.066 kPa - 25°C
Density and/or relative density:	1.03 g/cm ³ - 20°C
Relative vapour density: Particle characteristics:	3.4 - 20°C
	Not relevant/no data

9.2 Other information:

Molecular weight: 99.15 g/mol.

Explosive properties: The product is not explosive.

SECTION 10. STABILITY AND REACTIVITY

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

10.2 Chemical stability: Stable under normal storage conditions.

10.3 Possibility of hazardous reactions:

None known if used and storage as recommended.

10.4 Conditions to avoid: Avoid exposure to high temperatures or direct sunlight. Avoid heat, flames and other sources of ignition.

10.5 Incompatible materials: Strong acids. Oxidizing agents. Strong bases. Strong alkali compounds.

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10.6 Hazardous decomposition products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:	Not classified.
	<i>N</i> -methyl-2-pyrrolidone - CAS 872-50-4: Oral – LD50 – Rat: 3914 mg/kg Dermal – LD50 – Rat: 7000 mg/kg Dermal – LD50 – Rabbit: 8000 mg/kg Inhalation – LC50 – Rat: >5.1 mg/l/4 t. (vapour)
Skin corrosion/irritation:	Causes skin irritation. pH: 7.8 – 8.
Serious eye damage/irritation:	Causes serious eye damage. pH: 7.8 – 8.
Respiratory or skin sensitization:	Not classified.
Germ cell mutagenicity:	Not classified.
Carcinogenicity:	Not classified.
Reproductive toxicity:	May damage the unborn child.
Specific target organ toxicity - single exposure:	May cause respiratory irritation.
Specific target organ toxicity – repeated exposure:	Not classified.
Aspiration hazard:	Not classified.

11.2 Information on other hazards:

Endocrine disrupting properties:

Endocrine disrupting effect may be present since the product is classified H360D.

Additional information: -

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SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity: Not classified harmful to the environment.

N-methyl-2-pyrrolidone - CAS 872-50-4:
Fish – LC50 – 96 h.: 832 mg/L
Daphnia – EC50 – 48 h.: 4987 mg/L
Algae – ErC50 – 72 h.: >500 mg/L

12.2 Persistence and degradability:

N-methyl-2-pyrrolidone - CAS 872-50-4:
>90 % - 28 d. – OECD 301C - Readily biodegradable .
BOD: 0.69 % BOD BOD5/COD.

12.3 Bioaccumulative potential:

N-methyl-2-pyrrolidone - CAS 872-50-4:
Log Pow: -0.46 – 0.73.
No known potential.

12.4 Mobility in soil:

N-methyl-2-pyrrolidone - CAS 872-50-4:
The substance are water-soluble and can be spread in the aquatic environment.

12.5 Result of PBT and vPvB assessment:

This mixture does not meet the criteria for PBT or vPvB according to regulation 1907/2006 REACH, annex XIII.

12.6 Endocrine disrupting properties:

Endocrine disrupting effect may be present since the product is classified H360D.

12.7 Other adverse effects:

Avoid release to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

Avoid release to the environment. This product is hazardous waste.
Dispose in a safe manner in accordance with local/national regulations. The coding of a waste stream is based on the application of the product by the consumer – end-user.
Option:

EWC-Code: 07 01 04* other organic solvents, washing liquids and mother liquors.

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Contaminated packing: Properly cleaned container is disposed of according to packaging material, otherwise:
15 01 10* packaging containing residues of or contaminated by dangerous substances.

SECTION 14. TRANSPORT INFORMATION

This product is not classified as dangerous to transport.

	ADR/RID	IMDG/IMO
14.1 UN number	Not relevant	Not relevant
14.2 UN proper shipping name	Not relevant	Not relevant
14.3 Transport hazard class(es)	Not relevant	Not relevant
14.4 Packing group	Not relevant	Not relevant
14.5 Environmental hazards – MP EmS:	No Not relevant	No Not relevant
Other informations	LQ: Not relevant Tunnel: Not relevant	LQ: Not relevant Tunnel: Not relevant

14.6 Special precautions for user:
Not relevant.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
Not relevant.

SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

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Pressure Equipment (Amendment) Regulations 2011. Chemicals (Hazard Information and Packaging for Supply) Regulations 2009. Control of Substances Hazardous to Health Regulations 2002 (as amended). Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997. Reporting of Injuries, Personal Protective Equipment Regulations 2002. Personal Protective Equipment at Work Regulations 1992. Hazardous Waste (England and Wales) Regulations 2005(as amended). EC regulation 1907/2006 (REACH) Directive 2000/532/EC. EU No. 2020/878. CLP No. 1272/2008. GB CLP.

Additional information: People under the age of 18 must not be exposed to this product. Council Directive 94/33/EC.

Pregnant/lactating women should not handle the product.

N-methyl-2-pyrrolidone is a SVHC substance according to ECHA.

15.2 Chemical safety assessment:

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16. OTHER INFORMATION

Full text of H-phrases as mentioned in section 2/3:

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H360D May damage the unborn child.

Additional information:

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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Exposure Scenario (Industrial Use)

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1. Industrial use, Reagent pre-analysis, Chemical production

1. Sectors of use.

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites.

SU9 Manufacture of fine chemicals.

SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys).

Chemical Product

Category

PC19 Intermediate.

PC21 Laboratory chemicals.

Process categories

PROC1 Use in closed process, no likelihood of exposure.

PROC2 Use in closed, continuous process with occasional controlled exposure.

PROC3 Use in closed batch process (synthesis or formulation)

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

PROC10 Roller application or brushing

PROC15 Use as laboratory reagent

Environmental emission categories

ERC1 Manufacture of substances

ERC2 Formulation of preparations

ERC4 Industrial use of processing aids in processes and products, not becoming part of articles

ERC6a Industrial use resulting in manufacture of another substance (use of intermediates). ERC6b

Industrial use of reactive processing aids.

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2. Organizational measures to prevent/limit releases, dispersion and exposure

(Covers Daily Exposures Up to 8 hours.)

Contribution scenario for control of exposure to workers: PROC8b,PROC9

Product properties Concentration the substance in mixture / article	Covers the percentage of up to 100% in the product	of
Physical Form (wide use)	Moderate Volatile Fluid	
Process temperature	< 130°C	
Frequency and duration of use	8 hours / day, 5 days / week	

Other operational conditions affecting worker exposure

Outdoors / Indoors Indoors with local exhaust ventilation

Organisational measures to prevent/limit release from site Covers daily exposures up to 8 hours.

Conditions and measures related to personal protection, hygiene and health evaluation. Wear suitable gloves tested to EN374. Eye protection EN 166.

3. Exposure estimation and reference to its source

Environment

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

Worker

CS	Duration of Use Exposure		RCR	Assessment Methods For Exposure
	Descriptor	Weigh Effect		
2.2	PROC 8b	Inhalation, systemic, long term	0,155	ECETOC TRA
		Dermal, systemic, long term	0,035	ECETOC TRA
		Combined routes, systemic, long-term	0,19	ECETOC TRA
2.2	PROC 9	Inhalation, systemic, long term	0,515	ECETOC TRA

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		Dermal, systemic, long term	0,035	ECETOC TRA
		Combined routes, systemic, long-term	0,55	ECETOC TRA

Standard parameters and standard yields for the applied exposure assessment model have been used in the calculation (unless otherwise stated).

4. Guidance to downstream user to evaluate whether the works inside the boundaries set by the exposure

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs)

Validated by:

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