1-Methyl-2-pyrrolidone

66270-100ML

Version 2.1 Revision Date 05.03.2020 Supersedes 1

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

1.1. Product identifier

Product name	:	1-Methyl-2-pyrrolidone
SDS-number	:	000000020269
Type of product	:	Substance
Remarks	:	SDS according to Art. 31 of Regulation (EC) 1907/2006.
Chemical name	:	N-Methyl-2-pyrrolidone
Index-No.	:	606-021-00-7
REACH Registration Number	:	01-2119472430-46

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

Use of the Substance/Mixture	:	Laboratory chemicals
Uses advised against	:	none

1.3. Details of the supplier of the safety data sheet

Company	:	Honeywell Specialty Chemicals Seelze GmbH Wunstorfer Straße 40 30926 Seelze Germany	Honeywell International, Inc. 115 Tabor Road Morris Plains, NJ 07950-2546 USA
Telephone	:	(49) 5137-999 0	
Telefax	:	(49) 5137-999 123	
For further information, please contact:	:	PMTEU Product Stewardship: SafetyDataSheet@Honeywell.com	

1.4. Emergency telephone number

Emergency telephone number	:	+1-703-527-3887 (ChemTrec-Transport) +1-303-389-1414 (Medical)
Country based Poison Control Center	:	see chapter 15.1

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Reproductive toxicity Category 1B
H360D May damage the unborn child.
Eye irritation Category 2
H319 Causes serious eye irritation.
Specific target organ toxicity - single exposure Category 3 - Respiratory system
H335 May cause respiratory irritation.
Skin irritation Category 2
H315 Causes skin irritation.

2.2. Label elements

REGULATION (EC) No 1272/2008

Hazard pictograms :

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 :	P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P302 + P352	IF ON SKIN: Wash with plenty of water.
	P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
	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.

Special labelling of certain products: : Restricted to professional users.

2.3. Other hazards

Vapours may form explosive mixtures with air.

SECTION 3: Composition/information on ingredients

3.1. Substance

Chemical name	CAS-No. Index-No. REACH Registration Number EC-No.	Classification 1272/2008	Concentration	Remarks
N-Methyl-2-pyrrolidone	872-50-4 606-021-00-7 01-2119472430-46 212-828-1	Repr. 1B; H360D Eye Irrit. 2; H319 STOT SE 3; H335 Skin Irrit. 2; H315	100 %	1*

1* - For specific concentration limits see Annexes of 1272/2008

3.2. Mixture

Not applicable

Occupational Exposure Limit(s), if available, are listed in Section 8.
For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice:
First aider needs to protect himself. Move out of dangerous area. Take off all contaminated clothing immediately.

Inhalation:
If breathed in, move person into fresh air. If symptoms persist, call a physician.

Skin contact:
After contact with skin, wash immediately with plenty of soap and water. Take off all contaminated clothing immediately.

Eye contact:
Rinse thoroughly with plenty of water, also under the eyelids. Protect unharmed eye. Call a physician immediately.

Ingestion:
When swallowed, allow water to be drunk. Do NOT induce vomiting. Call a physician immediately.

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

no data available

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

Treat symptomatically.

See Section 11 for more detailed information on health effects and symptoms. :

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:
Water spray
Foam
Carbon dioxide (CO2)
Dry powder

Extinguishing media which shall not be used for safety reasons:
High volume water jet

5.2. Special hazards arising from the substance or mixture

In case of fire hazardous decomposition products may be produced such as:
carbon oxides (CO, CO2), nitrogen oxides (NOx).
May form explosive mixtures in air.

5.3. Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Ensure adequate ventilation. Keep people away from and upwind of spill/leak.

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.
Pick for disposal in tightly closed containers

6.4. Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:
Avoid exposure - obtain special instructions before use. Do not breathe vapours or spray mist. Avoid contact with skin and eyes. Exhaust ventilation at the object is necessary.

Advice on protection against fire and explosion:
Take measures to prevent the build up of electrostatic charge. Ensure all equipment is electrically grounded before beginning transfer operations.

Hygiene measures:
General industrial hygiene practice.

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions:
Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place.

7.3. Specific end use(s)

no additional data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits:

Components	Basis / Value type	Value / Form of exposure	Exceeding Factor	Remarks
N-Methyl-2-pyrrolidone	EU ELV SKIN_DES			Can be absorbed through the skin.
N-Methyl-2-pyrrolidone	EU ELV STEL	80 mg/m3 20 ppm		Indicative
N-Methyl-2-pyrrolidone	EU ELV TWA	40 mg/m3 10 ppm		Indicative
N-Methyl-2-pyrrolidone	EH40 WEL TWA	40 mg/m3 10 ppm		
N-Methyl-2-pyrrolidone	EH40 WEL STEL	80 mg/m3 20 ppm		
N-Methyl-2-pyrrolidone	EH40 WEL SKIN_DES			Can be absorbed through the skin.

SKIN_DES - Skin designation:
STEL - Short term exposure limit
TWA - Time weighted average

DNEL/ PNEC-Values

Component	End-use/impact	Exposure duration	Value	Exposure routes	Remarks
N-Methyl-2-pyrrolidone	Workers / Long-term systemic effects		14,4 mg/m3	Inhalation	
N-Methyl-2-pyrrolidone	Workers / Acute systemic effects		40 mg/m3	Inhalation	
N-Methyl-2-pyrrolidone	Workers / Long-term systemic effects		4,8 mg/kg	Skin contact	
N-Methyl-2-pyrrolidone	Consumers / Long-term systemic effects		3,6 mg/m3	Inhalation	

N-Methyl-2-pyrrolidone	Consumers / Long-term local effects		4,5 mg/m3	Inhalation	
N-Methyl-2-pyrrolidone	Consumers / Long-term systemic effects		2,4 mg/kg	Skin contact	
N-Methyl-2-pyrrolidone	Consumers / Long-term systemic effects		0,85 mg/kg	Ingestion	

Component	Environmental compartment / Value	Remarks
N-Methyl-2-pyrrolidone	Fresh water: 0,25 mg/l	Assessment factor: 50
N-Methyl-2-pyrrolidone	Marine water: 0,025 mg/l	Assessment factor: 500
N-Methyl-2-pyrrolidone	Sewage treatment plant: 10 mg/l	Assessment factor: 10
N-Methyl-2-pyrrolidone	Fresh water sediment: 1,09 mg/kg dw	
N-Methyl-2-pyrrolidone	Marine sediment: 0,109 mg/kg dw	
N-Methyl-2-pyrrolidone	Soil: 0,07 mg/kg dw	

8.2. Exposure controls

Occupational exposure controls

The Personal Protective Equipment must be in accordance with EN standards:respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, 511; safety shoes EN-ISO 20345.

Personal protective equipment
Respiratory protection:
In the case of vapour formation use a respirator with an approved filter.

Hand protection:
Glove material: butyl-rubber
Break through time: > 480 min
Glove thickness: 0,7 mm
Butoject® 898
Gloves must be inspected prior to use.
Replace when worn.

Remarks:Supplementary note: The specifications are based on information and tests from similar substances by analogy.
Due to varying conditions (e.g.temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.
Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer reccomends to use the chemical protective glove in practice not longer than 50% of the recomended permeation time.
Manufacturer´s directions for use should be observed because of great diversity of types .
Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

Eye protection:
Safety goggles

Skin and body protection:
Protective suit

Environmental exposure controls

Handle in accordance with local environmental regulations and good industrial practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	:	liquid
Colour	:	colourless
Odour	:	amine-like
molecular weight	:	99,13 g/mol
Melting point/range	:	-24 °C
Boiling point/boiling range	:	204 °C at 1.013 hPa
Flash point	:	91 °C Method: DIN 51758
Flammability (solid, gas)	:	not auto-flammable
Ignition temperature	:	245 °C
Lower explosion limit	:	1,3 %(V)

Upper explosion limit	:	9,5 %(V)
Vapour pressure	:	0,32 hPa at 20 °C
Density	:	1,028 g/cm3 at 20 °C
Viscosity, dynamic	:	1,661 mPa.s at 25 °C
Viscosity, kinematic	:	no data available
pH	:	8,5 - 10 Concentration: 100 g/l at 20 °C
Water solubility	:	completely miscible
Solubility in other solvents	:	Soluble in most organic solvents
Partition coefficient: n-octanol/water	:	log Pow -0,46
Relative vapour density	:	no data available
Evaporation rate	:	no data available

9.2 Other Information

no additional data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

No decomposition if used as directed.

10.3. Possibility of hazardous reactions

Vapours may form explosive mixture with air.

10.4. Conditions to avoid

Keep away from heat and sources of ignition.

10.5. Incompatible materials

Oxidizing agents
Acids
Bases

10.6. Hazardous decomposition products

No dangerous reaction known under conditions of normal use.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:
LD50
Species: Rat
Value: 4.150 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity:
LD50
Species: Rat
Value: > 5.000 mg/kg
Method: OECD Test Guideline 402

Acute inhalation toxicity:
LC50
Species: Rat
Value: > 5,1 mg/l
Exposure time: 4 h
Method: OECD Test Guideline 403
Aerosol

Skin irritation:
Classification based on Annex VI of regulation 1272/2008/EC.

Eye irritation:
Classification based on Annex VI of regulation 1272/2008/EC.

Respiratory or skin sensitisation:
no data available

Repeated dose toxicity:
Note: Classification based on Annex VI of regulation 1272/2008/EC.

Germ cell mutagenicity:
Note: Not classified due to data which are conclusive although insufficient for classification.

Aspiration hazard:
no data available

Other information:
May cause harm to the unborn child.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish:
LC50
Species: Oncorhynchus mykiss (rainbow trout)
Value: > 500 mg/l
Exposure time: 96 h

Toxicity to aquatic plants:
ErC50
Species: scenedesmus subspicatus
Value: 673 mg/l
Exposure time: 72 h
Method: DIN 38412

Toxicity to aquatic invertebrates:
Not classified due to data which are conclusive although insufficient for classification.

Chronic toxicity to aquatic invertebrates:
NOEC
Species: Daphnia magna (Water flea)
Value: 12,5 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211

12.2. Persistence and degradability

Biodegradability:
Biodegradation: 73 %
Exposure time: 28 d
Result: Readily biodegradable
Method: OECD Test Guideline 301C

12.3. Bioaccumulative potential

No bioaccumulation is to be expected (log Pow <= 4).

12.4. Mobility in soil

no data available

12.5. Results of PBT and vPvB assessment

no data available

12.6. Other adverse effects

Biochemical Oxygen Demand (BOD)	:	Value: < 2 mg/g
Chemical Oxygen Demand (COD)	:	Value: ca. 1.600 mg/g Method: DIN 38409-H-41

Bioaccumulation is unlikely.
Do not flush into surface water or sanitary sewer system.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product:
Dispose according to legal requirements.

Packaging:
Legal requirements are to be considered in regard of reuse or disposal of used packaging materials

Further information:
Provisions relating to waste:
EC Directive 2006/12/EC; 2008/98/EEC
Regulation No. 1013/2006

For personal protection see section 8.

SECTION 14: Transport information

ADR/RID
Not dangerous goods

IATA
Not dangerous goods

IMDG
Not dangerous goods

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SECTION 15: Regulatory information

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

Basis	Value	Remarks
Regulation (EC) No. 1907/2006, Annex XVII		This product contains an ingredient according to Annex XVII of the REACH Regulation1907/2006/EC.

Poison Control Center

Country	Phone Number
Austria	+4314064343
Belgium	070 245245
Bulgaria	(+)35929154233
Croatia	(+3851)23-48-342
Cyprus	+357 2240 5611
Czech Republic	+420224919293; +420224915402
Denmark	82121212
Estonia	16662; (+372)6269390
Finland	9471977
France	+33(0)145425959
Greece	+30 210 779 3777
Hungary	(+36-80)201-199
Iceland	5432222
Ireland	+353(1)8092166
Italy	+39 0649906140
Germany	Berlin : 030/19240
	Bonn : 0228/19240
	Erfurt : 0361/730730
	Freiburg : 0761/19240
	Göttingen : 0551/19240
	Homburg : 06841/19240
	Mainz : 06131/19240

Country	Phone Number
Liechtenstein	+41 442515151
Lithuania	+370532362052
Luxembourg	070245245; (+352)80002-5500
Malta	+356 2395 2000
Netherlands	030-2748888
Norway	22591300
Poland	+48 42 25 38 400
Portugal	808250143
Romania	+40 21 318 3606
Slovakia (NTIC)	+421 2 54 774 166
Slovenia	+386 1 400 6051
Spain	+34915620420
Sweden	112 (begär Giftinformation);+46104566786
Switzerland	145
United Kingdom	(+44) 844 892 0111

	Munich : 089/19240
Latvia	+37167042473

Other inventory information

US. Toxic Substances Control Act
On TSCA Inventory

Australia. Industrial Chemical (Notification and Assessment) Act
On the inventory, or in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)
All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List
On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI)
On the inventory, or in compliance with the inventory

Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act
On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC)
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand
On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Text of H-statements referred to under heading 3

N-Methyl-2-pyrrolidone	:	H360D	May damage the unborn child.
		H319	Causes serious eye irritation.
		H335	May cause respiratory irritation.
		H315	Causes skin irritation.

Further information

All directives and regulations refer to amended versions.
Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

Honeywell
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1-Methyl-2-pyrrolidone

66270-100ML

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Abbreviations:
EC European Community
CAS Chemical Abstracts Service
DNEL Derived no effect level
PNEC Predicted no effect level
vPvB Very persistent and very biaccumulative substance
PBT Persistent, bioaccmulative und toxic substance

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