RCI Labscan Limited

SAFETY DATA SHEET

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
Revision Date Apr 01, 2020

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

1.1 Product identifier

Product name	n-METHYL-2-PYRROLIDONE
CAS-No.	872-50-4
Product code	AH1124, AR1123, CG1123, GC1123, GP1123, HS1123, LC1123, PS1123, RP1123, XP1278

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

Identified uses	Chemical for analysis and production.

1.3 Details of the supplier of the safety data sheet

Company	RCI LABSCAN LIMITED. 24 Rama 1 Road, Pathumwan, Bangkok 10330 Thailand
Telephone number	(662) 613-7911-4
Fax number	(662) 613-7915

1.4 Emergency Telephone Number

Emergency phone	(662) 613-7911-4

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Skin irritation (Category 2), H315
Eye irritation (Category 2), H319
Reproductive toxicity (Category 1B), H360D
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal word	Danger

Hazard statement(s)

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H360D	May damage fertility or the unborn child.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing vapours.
P264	Wash hand thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302 + P352	IF ON SKIN: Wash with plenty 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.
P312	Call a POISON CENTER/doctor/if you feel unwell.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

2.3 Other hazards None

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms 1-Methyl-2-pyrrolidone, nMP.

CAS-No	EC-No	EC-Index-No	Formula	Molecular Weight	Weight %
872-50-4	212-828-1	606-021-00-7	C_5H_9NO	99.13 g/mol	>99

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Concentration	Classification
n-Methyl-2-pyrrolidone		
CAS-No 872-50-4 EC-No 212-828-1 EC-Index-No 606-021-00-7	>99%	Skin irritation (Category 2), H315 Eye irritation (Category 2), H319 Reproductive toxicity (Category 1B), H360D Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

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	Show this safety data sheet to the doctor in attendance.
Inhalation	Move to fresh air in case of accidental inhalation of vapors. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus.
Skin contact	Remove contaminated clothing and wash affected skin with soap and water. If signs of poisoning appear, treat as for inhalation. Obtain medical attention. Wash contaminated clothing before reuse. Contaminated combustible material, e.g. clothing ignites more readily and burns fiercely.
Eye contact	If the substance has got into the eyes, immediately wash out with plenty of water at least 15 minutes. Obtain medical attention.
Ingestion	Rinse mouth. Do not induce vomiting. Immediately make victim drink water (two glasses at the most) Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus. Obtain medical attention. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2.2 and section 11.

4.3 Indication of any immediate medical attention and special treatment needed

Not Available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Extinguish with carbon dioxide, dry chemical or foam. In the event of fire, cool tanks with water spray.

5.2 Special hazards arising from the substance or mixture

Vapors may form explosive mixture with air. Flash back possible over considerable distance.

5.3 Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

5.4 Further information

Standard procedure for chemical fires. Prevent firefighting water from entering surface water or groundwater.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Do not breathe vapors or spray mist. Wear a positive-pressure supplied-air respirator, flame retardant antistatic protective clothing. Shut off leaks if without risk. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

Contain or absorb leaking liquid with sand or earth, consults an expert. Prevent liquid entering sewers, basements and workpits. If substance has entered a water course or sewer or contaminated soil, advise police.

6.3 Methods and materials for containment and cleaning up

Spillage: May react with combustible substances creating fire or explosion hazard and formation of toxic fumes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Soak up with inert absorbent material (e.g. sand, silica gel). Prevent liquid entering sewers, basements and workpits; vapor may create explosive atmosphere. Transfer to covered steel drums. Dispose of promptly.

6.4 Reference to other sections

For disposal see **Section 13**.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Keep container tightly closed. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing. Do not empty into drains.

7.2 Conditions for safe storage, including any incompatibilities

Keep tightly closed at room temperature in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Keep out of direct sunlight and away from incompatible materials. Store in original container. Electrical equipment should be protected to the appropriate standard.

7.3 Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL)

Application Area	Health Effects	Exposure	Value
Worker	Acute Systemic effects	Inhalation	80 mg/m³
Worker	Acute Systemic effects	Skin contact	208 mg/kg Body weight
Worker	Long-term Systemic effects	Inhalation	40 mg/m³
Worker	Long-term Systemic effects	Skin contact	19.8 mg/kg Body weight

Predicted No Effect Concentration (PNEC)

Compartment	Value
Aquatic intermittent release	5 mg/l
Fresh water	0.25 mg/l
Fresh water sediment	0.805 mg/kg
Marine water	0.025 mg/l
Sewage treatment plant	10 mg/l
Soil	0.138 mg/kg

8.2 Exposure controls

Appropriate engineering controls

The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Ventilation hoods and fans required when working with organic solvents or in hot melt applications.

Individual protection measures (Personal protective equipment, PPE)

Eye/face protection

Goggles giving complete protection to eyes.

Skin protection

Chemical resistant apron / flame retardant antistatic protective clothing, heavy duty work shoes.
Handle with gloves

- Full contact wears gloves from butyl rubber material.
- Splash contact wears gloves from natural rubber material.

The select protective gloves have to satisfy the specifications of EU Directive 89/686 EEC and standard EN 374 derived from it.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. Required when vapor/aerosols are generated filter AX (EN 141 or EN 14387).

Environmental exposure controls

Prevent liquid entering sewers, basements and workpits.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance: Form	Liquid
: Color	Colorless
Odour	Amine like
Odour Threshold	Not Available
pH	8.5-10.0 at 20ºC
Melting point/range	-24 ºC
Boiling point/range	202 ºC at 1013 hPa
Flash point	91 ºC (closed cup)
Evaporation rate	Not Available
Flammability (solid, gas)	Not Available

Explosion limits: lower	1.3 % (V)
upper	9.5 % (V)
Vapor Pressure	0.32 hPa at 20 ºC
Relative Vapor Density	3.42
Density	1.030 g/ml at 20 ºC
Water solubility	1000 g/l at 25 ºC
Partition coefficient (n-octanol/water)	log Pow: -0.46
Auto-Ignition temperature	245 °C
Decomposition Temperature	Not Available
Viscosity	1.80 mPa.s at 20ºC
Explosive properties	Not Explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.

SECTION 10: Stability and reactivity

10.1 Reactivity

Hygroscopic. Sensitive to light. Explosible with air in a vaporous/gaseous state.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

The substance can react dangerously with strong oxidizing agents, strong acids, nitric acid.

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

Strong oxidizing agents, strong acids, nitric acid.
Unsuitable working materials: Various plastic.

10.6 Hazardous decomposition products

Nitrogen oxides, carbon monoxide, carbon dioxide (Hazardous decomposition products from under fire condition).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LC_{50} (inhalation, rat): 5.1 mg/l/4 h.
LD_{50} (oral, rat): 3598 mg/kg.
LD_{50} (dermal, rabbit): 8000 mg/kg.

Acute oral toxicity

Symptoms : Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract. Pain, vomiting, diarrhea.

Acute inhalation toxicity

Symptoms: irritation in the respiratory tract.

Skin corrosion/irritation

Irritations, danger of skin absorption.

Serious eye damage/eye irritation

Irritations.

Respiratory or skin sensitization
Not Available

Germ cell mutagenicity
Bacterial mutagenicity; Ames test is negative.

Carcinogenicity
Noncarcinogenic in animal experiments.

Reproductive toxicity
May cause harm to the unborn child.

Teratogenicity
Not Available

Specific target organ toxicity (STOT) - single exposure
May cause respiratory irritation.

Specific target organ toxicity (STOT) - repeated exposure
Not Available

Aspiration hazard
Not Available

Further information
The product should be handled with the care usual when dealing with chemicals.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	LC_{50} L.macrochirus : 832 mg/l/96h.
Toxicity to daphnia and other aquatic invertebrates	EC_{50} Daphnia magna: 4897 mg/l/48h.
Toxicity to algae	IC_{50} Desmodesmus subspicatus: >500 mg/l/72h.
Toxicity to bacteria	EC_{50} Bacteria : >9000 mg/l/48h.

12.2 Persistence and degradability
Biodegradability >90 % /20d. Readily biodegradable.

12.3 Bioaccumulative potential
Partition coefficient (n-octanol/water) log Pow: -0.46 (experimental).
No bioaccumulation is to be expected (log P o/w <1)

12.4 Mobility in soil
Not Available

12.5 Other adverse effects
Do not allow to enter waters, waste water or soil.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved

waste disposal companies which will advise you on how to dispose of special waste or burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Contaminated packaging
Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

SECTION 14: Transport information

Not subject to transport regulations.

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Not Available

15.2 Chemical Safety Assessment
For this product a chemical safety assessment was not carried out.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H360D	May damage fertility or the unborn child.

Recommended restrictions
Take notice of labels and safety data sheets for the working. Chemicals Take necessary action to avoid static electricity discharge.

Reference
Globally Harmonized System of Classification and Labelling of Chemicals (GHS).
Labelling according to EC Directives 67/548 EEC and Regulation (EC) No 1272/2008.
Transportation information according to Recommendations on the Transport of Dangerous Goods, Model Regulations. Twelfth revised edition. United Nations.
Institute for Occupational Safety and Health of the German Social Accident Insurance in Sankt Augustin/Germany, Source: IFA for Databases on hazardous substances (GESTIS).

Further information
Contact to RCI Labscan Limited.

Revision Date
01/04/2020