1-Methyl-2-pyrrolidinone (cas 872-50-4) MSDS

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

1.1 Product identifiers
Product name : 1-Methyl-2-pyrrolidinone
Product Number : 242799
Brand : Anonymous
Index-No. : 606-021-00-7
REACH No. : 01-211947243-46-XXXX
CAS-No. : 872-50-4

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses : Laboratory chemicals, Manufacture of substances

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]
- Eye irritation (Category 2)
- Skin irritation (Category 2)
- Reproductive toxicity (Category 1B)
- Specific target organ toxicity - single exposure (Category 3)

Classification according to EU Directives 67/548/EEC or 1999/45/EC
- May cause harm to the unborn child.
- Irritating to eyes, respiratory system and skin.

2.2 Label elements
Labelling according Regulation (EC) No 1272/2008 [CLP]
Pictogram

Signal word Danger
Hazard statement(s)
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H360D May damage the unborn child.

Precautionary statement(s)
P201 Obtain special instructions before use.
P261 Avoid breathing vapours.
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.

Supplemental Hazard Statements


Hazard symbol(s)

R-phrase(s)
R61 May cause harm to the unborn child.
R36/37/38 Irritating to eyes, respiratory system and skin.

S-phrase(s)
S53 Avoid exposure - obtain special instructions before use.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Restricted to professional users.

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS
3.1 Substances
Synonyms: n-methyl-2-pyrrolidone
1-Methyl-2-pyrrolidone
NMP

Formula: C5H9NO
Molecular Weight: 99.13 g/mol

Component | Concentration
--- | ---
N-methyl-2-pyrrolidone | Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)
CAS-No. | 872-50-4
EC-No. | 212-828-1
Index-No. | 606-021-00-7
Registration number | 01-2119472430-46-XXXX

4. FIRST AID MEASURES
4.1 Description of first aid measures
General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
prolonged or repeated exposure can cause: Vomiting, Diarrhoea, Abdominal pain. Rats exposed to 1-methyl-2-pyrrolidinone at a concentration of 1 mg/L as an aerosol for 10 days showed depletion of hematopoietic cells in the bone marrow and atrophy of the lymphoid tissues of the thymus, spleen, and lymph nodes.

4.3 Indication of any immediate medical attention and special treatment needed
no data available

5. FIREFIGHTING MEASURES
5.1 Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, nitrogen oxides (NOx)

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES
6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE
7.1 Precautions for safe handling
Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store under inert gas. Moisture sensitive.

7.3 Specific end uses
no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
8.1 Control parameters
Components with workplace control parameters
8.2 Exposure controls
Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Immersion protection
Material: butyl-rubber
Minimum layer thickness: 0,3 mm
Break through time: > 480 min
Material tested:Butoject (Anonymous Z677647, Size M)

Splash protection
Material: Nature latex/chloroprene
Minimum layer thickness: 0,6 mm
Break through time: > 30 min
Material tested:Lapren® (Anonymous Z677558, Size M)
Data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body protection
Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES
9.1 Information on basic physical and chemical properties
a) Appearance Form: liquid
b) Odour: colourless

c) Odour Threshold: no data available

d) pH: 7.7 - 8

e) Melting point/freezing point: Melting point/range: -24 °C

f) Initial boiling point and boiling range: 202 °C - 82 °C at 13 hPa

g) Flash point: 91 °C - closed cup

h) Evaporation rate: no data available

i) Flammability (solid, gas): no data available

j) Upper/lower flammability or explosive limits: Upper explosion limit: 9.5 % (V)
   Lower explosion limit: 1.3 % (V)

k) Vapour pressure: 0.39 - 0.43 hPa at 20 °C
   1.32 hPa at 40 °C

l) Vapour density: 3.42 - (Air = 1.0)

m) Relative density: 1.028 g/mL at 25 °C

n) Water solubility: no data available

o) Partition coefficient: n-octanol/water: log Pow: -0.46

p) Autoignition temperature: no data available

q) Decomposition temperature: no data available

r) Viscosity: no data available

s) Explosive properties: no data available

t) Oxidizing properties: no data available

9.2 Other safety information

   Surface tension: 40.7 mN/m

10. STABILITY AND REACTIVITY

10.1 Reactivity: no data available

10.2 Chemical stability: no data available

10.3 Possibility of hazardous reactions: no data available

10.4 Conditions to avoid: Heat, flames and sparks.

10.5 Incompatible materials: Strong acids, Strong oxidizing agents

10.6 Hazardous decomposition products: Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

   Acute toxicity
   LD50 Oral - rat: 3.914 mg/kg
   LD50 Inhalation - rat: 4 h - > 5100 ppm
   LD50 Dermal - rabbit: 8.000 mg/kg

   Skin corrosion/irritation: no data available

   Serious eye damage/eye irritation: Eyes - rabbit: Eye irritation

   Respiratory or skin sensitization: no data available

   Germ cell mutagenicity: no data available
Carcinogenicity
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.

Reproductive toxicity
Damage to fetus possible

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
no data available

Potential health effects
Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion May be harmful if swallowed.
Skin May be harmful if absorbed through skin. Causes skin irritation.
Eyes Causes serious eye irritation.

Signs and Symptoms of Exposure
prolonged or repeated exposure can cause; Vomiting, Diarrhoea, Abdominal pain, Rats exposed to 1-methyl-2-pyrrolidinone at a concentration of 1 mg/L as an aerosol for 10 days showed depletion of hematopoietic cells in the bone marrow and atrophy of the lymphoid tissues of the thymus, spleen, and lymph nodes.

Additional Information
RTECS: UY5790000

12. ECOLOGICAL INFORMATION
12.1 Toxicity
Toxicity to fish LC50 - other fish - 4.000 mg/l - 96 h
LC50 - Leuciscus idus (Golden orfe) - > 500 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - > 1.000 mg/l - 24 h
Toxicity to bacteria LC50 - Bacteria - > 9.000 mg/l

12.2 Persistence and degradability
Biodegradability Result: 90 % - Readily biodegradable.

12.3 Bioaccumulative potential
no data available

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
no data available

12.6 Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS
13.1 Waste treatment methods
Product
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION
14.1 UN number
ADR/RID: - IMDG: - IATA: -

14.2 UN proper shipping name
ADR/RID: Not dangerous goods IMDG: Not dangerous goods IATA: Not dangerous goods

14.3 Transport hazard class(es)
ADR/RID: - IMDG: - IATA: -

14.4 Packaging group
14.5 **Environmental hazards**  
ADR/RID: no  
IMDG: no  
IMDG Marine pollutant: no  
IATA: no  

14.6 **Special precautions for user**  
no data available  

15. **REGULATORY INFORMATION**  
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.  

15.1 **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
no data available  

15.2 **Chemical Safety Assessment**  
no data available  

16. **OTHER INFORMATION**  
**Further information**  
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information this document is based on the resent state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. guidechem shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.