

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



64732 N-Methyl-2-Pyrrolidone

Page 1

Revised edition: 11.06.2024

Version: 5

Printed: 15.10.2024

1. Identification of the Substance/Mixture and of the Company/Undertaking

1.1. Product Identifier

Product Name: N-Methyl-2-Pyrrolidone

Article No.: 64732

UFI: --

1.2. Relevant identified Uses of the Substance or Mixture and Uses advised against

Identified uses:

Laboratory chemical
Laboratory and analytical uses
Application as raw material
Formulation of preparations
Application in cleaning substances
Industrial or for other purposes used surface treatment or coating
(protective coating)
Coatings for particular industrial and professional uses

Uses advised against:

1.3. Details of the Supplier of the Safety Data Sheet (Producer/Importer)

Company: Kremer Pigmente GmbH & Co. KG

Address: Hauptstr. 41-47, 88317 Aichstetten, Germany

Tel./Fax.: Tel +49 7565 914480, Fax +49 7565 1606

Internet: www.kremer-pigmente.com

E-Mail: info@kremer-pigmente.com

Importer: --

1.4. Emergency No.

Emergency No.: +49 7565 914480 (Mon-Fri 8:00 - 17:00)

1.4.2 Poison Center:

2. Hazards Identification

2.1. Classification of the Substance or Mixture

*Classification according to Regulation
(EC) No. 1272/2008 (CLP/GHS)*

Skin corrosion, hazard category 2
Serious eye damage, hazard category 2
Specific Target Organ Toxicity (single exposure), hazard category 3

Reproductive toxicity, hazard category 1B

H315 Causes skin irritation.

Cat.: 2

H319 Causes serious eye irritation.

Cat.: 2

H335 May cause respiratory irritation.

Cat.: 3

H360D May damage the unborn child.

Cat.: Repr. 1A

Possible Environmental Effects:

next page: 2

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



64732 N-Methyl-2-Pyrrolidone

Page 2

Revised edition: 11.06.2024

Version: 5

Printed: 15.10.2024

2.2. Label Elements

Classification according to Regulation (EC) No. 1272/2008 (CLP/GHS)

Hazard designation:



GHS07



GHS08-2

Signal word:

Danger

Hazard designation:

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

Safety designation:

P201	Obtain special instructions before use.
P280	Wear protective gloves/ clothing/ eye/ face protection.
P308+P313	If exposed or concerned: Get medical advice/attention.
P403+P233	Store in a well ventilated place. Keep container tightly closed.
P501	Dispose of contents/ container according to regional, national and international regulations.

Hazardous components for labelling:

2.3. Other Hazards

Restricted to professional users.

3. Composition/Information on Ingredients

3.1. Substance

3.2. Mixture

Chemical Characterization:

Information on Components / Hazardous Ingredients:

1-Methyl-2-pyrrolidone (GHS07-08; H360D-315-319-335); REACH Reg. No. 01-2119472430-46-xxxx	100 %	CAS-Nr: 872-50-4 EINECS-Nr: 212-828-1 EC-Nr: 606-021-00-7
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Additional information:

4. First Aid Measures

4.1. Description of the First Aid Measures

General information:

Self-protection of the first-aider.

next page: 3

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



64732 N-Methyl-2-Pyrrolidone

Page 3

Revised edition: 11.06.2024

Version: 5

Printed: 15.10.2024

Remove contaminated clothes.

After inhalation:

Supply fresh air.

In case of unconsciousness place patient stable in side position for transportation.

Consult physician if symptoms persist.

After skin contact:

Wash with plenty of water and soap. Remove contaminated clothing and shoes.

If symptoms persist, consult a physician.

After eye contact:

Rinse open eyes with plenty of water for at least 10 minutes.

Seek medical attention if irritation persists.

After ingestion:

Rinse mouth and give plenty of water to drink.

If symptoms persist, call a physician.

4.2. Most important Symptoms and Effects, both Acute and Delayed

Symptoms:

Headache, gastrointestinal disorders, nausea

Effects:

4.3. Indication of any Immediate Medical Attention and special Treatment needed

Treatment:

Treat symptomatically.

5. Fire-Fighting Measures

5.1. Extinguishing Media

Suitable extinguishing media:

CO2, extinguishing powder, water jet.

Fight larger fire with water jet or alcohol resistant foam.

Unsuitable extinguishing media:

Water with full jet.

5.2. Special Hazards arising from the Substance or Mixture

Special hazards:

Vapor is heavier than air and spreads along the ground.

In case of fire: formation of carbon oxides, nitrogen oxides.

5.3. Advice for Firefighters

Protective equipment:

Wear self-contained respiratory protective device.

Usual measures for chemical fires.

Further information:

Cool exposed containers with water spray.

Contaminated extinguishing water and debris should be disposed of according to local regulations.

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



64732 N-Methyl-2-Pyrrolidone

Page 4

Revised edition: 11.06.2024

Version: 5

Printed: 15.10.2024

6. Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Personal precautions:

Wear protective clothing.

Avoid inhalation of dust and vapors.

Provide adequate ventilation. Keep away from sources of ignition.

6.2. Environmental Precautions

Environmental precautions:

Prevent contamination of soils, drains and surface water.

6.3. Methods and Material for Containment and Cleaning Up

Methods and material:

Contain with absorbent material (sand, diatomaceous earth, acid binder, universal absorbent) and dispose accordingly.

6.4. Reference to other Sections

Protective clothing, see Section 8.

See Section 13 for information on disposal.

7. Handling and Storage

7.1. Precautions for Safe Handling

Instructions on safe handling:

Provide adequate ventilation.

Hygienic measures:

Wash hands before breaks and after work.

Keep away from foodstuffs and drinks.

7.2. Conditions for Safe Storage, including any Incompatibilities

Storage conditions:

Store containers in a well ventilated location.

Store in tightly sealed containers in a dry and cool room.

Protect against heat and direct sunlight.

Requirements for storage areas and containers:

Store the product in the original container.

Open and handle container with care.

Avoid pollution of soil.

Information on fire and explosion protection:

Avoid aerosol formation.

Keep away from sources of heat and ignition - do not smoke.

Storage class:

6.1 C; Combustible, acute toxic cat. 3 / toxic products (TRGS 510)

Further Information:

7.3. Specific End Use(s)

Further information:

No information available.

next page: 5

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



64732 N-Methyl-2-Pyrrolidone

Page 5

Revised edition: 11.06.2024

Version: 5

Printed: 15.10.2024

8. Exposure Controls/Personal Protection

8.1. Parameters to be Controlled

Parameters to be controlled (DE):

TRGS 900

1-Methyl-2-pyrrolidon (872-50-4), TLV: Long-term value: 40 mg/m³; 10 ml/m³; 2(l)

Parameters to be controlled:

1-Methyl-2-pyrrolidone (872-50-4): MAK (CH): Average value: 20 ppm; 80 mg/m³; Short term value: 40 ppm; 160 mg/m³; IOELV (EC): Average value: 10 ppm; 40 mg/m³; Short term value: 20 ppm; 80 mg/m³

Derived No-Effect Level (DNEL):

208 mg/kg (worker, skin contact, short-term exposition - systemic effects)

80 mg/m³ (worker, inhalation, short-term exposure - systemic effects)

14.4 mg/m³ (worker, inhalation, long-term exposure - systemic effects)

40 mg/m³ (worker, inhalation, long-term exposure - local effects)

4.8 mg/kg bw/d (worker, skin contact, long-term exposure - systemic effects)

PNEC (Predicted No-Effect Concentration):

Fresh water: 0.25 mg/l

Seawater: 0.025 mg/l

Fresh water sediment: 1.09 mg/kg

Sea water sediment: 0.109 mg/kg

Intermittent release: 5 mg/l

Sewage treatment system (STP): 10 mg/l

Soil: 0.07 mg/kg

Additional Information:

8.2. Exposure Controls

Technical protective measures:

Personal Protection

General protective measures:

Wash hands before breaks and after work.

Keep away from foodstuffs, beverages and feed.

Respiratory protection:

If ventilation is inadequate, wear a respirator with a full face mask with combination filter (US) or with filter type ABEK (EN 14387) filter cartridge.

Hand protection:

Protective gloves (EN 374)

Protective glove material:

Butyl rubber (480 min, 0.7 mm)

next page: 6

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



64732 N-Methyl-2-Pyrrolidone

Page 6

Revised edition: 11.06.2024

Version: 5

Printed: 15.10.2024

Eye protection:

Safety glasses with protective shields (EN 166).

Body protection:

Protective clothing and shoes.

Environmental precautions:

*Prevent contamination of open water ways and sewage system.
Avoid contamination of ground water.*

9. Physical and Chemical Properties

9.1. Information on Basic Physical and Chemical Properties

<i>Form:</i>	<i>liquid</i>
<i>Color:</i>	<i>colorless</i>
<i>Odor:</i>	<i>amine-like</i>
<i>Odor threshold:</i>	<i>no information available</i>
<i>pH-Value:</i>	<i>not determined</i>
<i>Melting temperature:</i>	<i>-24°C (1013 hPa)</i>
<i>Boiling temperature:</i>	<i>202°C (1013 hPa)</i>
<i>Flash point:</i>	<i>93°C (1013 hPa)</i>
<i>Evaporation rate:</i>	<i>No information available.</i>
<i>Flammability (solid, gas):</i>	<i>not applicable</i>
<i>Upper explosion limit:</i>	<i>9.5 Vol.-%</i>
<i>Lower explosion limit:</i>	<i>1.3 Vol.-%</i>
<i>Vapor pressure:</i>	<i>0.32 hPa (20°C)</i>
<i>Vapor density:</i>	
<i>Density:</i>	<i>1.03 g/cm³ (20°C)</i>
<i>Solubility in water:</i>	<i>miscible</i>
<i>Coefficient of variation (n-Octanol/Water):</i>	<i>not determined</i>
<i>Auto-ignition temperature:</i>	
<i>Decomposition temperature:</i>	<i>No data available.</i>
<i>Viscosity, dynamic:</i>	<i>1.65 mPa.s (20°C)</i>
<i>Explosive properties:</i>	<i>Product does not present an explosion hazard.</i>
<i>Oxidizing properties:</i>	

next page: 7

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



64732 N-Methyl-2-Pyrrolidone

Page 7

Revised edition: 11.06.2024

Version: 5

Printed: 15.10.2024

none

Bulk density:

not applicable

9.2. Further Information

Solubility in solvents:

Viscosity, kinematic:

Burning class:

Solvent content:

Solid content:

Particle size:

Other information:

Temperature class: T3 (maximum temperature: 200°C)

10. Stability and Reactivity

10.1. Reactivity

No information available.

10.2. Chemical Stability

Stable if used according to specifications.

10.3. Possibility of Hazardous Reactions

Vigorous reactions with strong acids, strong alkalis and strong oxidizing agents.

10.4. Conditions to Avoid

Conditions to avoid:

Avoid contact with heat, sparks and open fire.

Thermal decomposition:

10.5. Incompatible Materials

Avoid contact with other chemicals.

10.6. Hazardous Decomposition Products

In the event of fire: see part 5.

10.7. Further Information

11. Toxicological Information

11.1. Information on Hazard Classes as defined in Regulation (EC) No. 1272/2008

Not classified as acute toxic.

Acute Toxicity

LD50, oral:

3914 mg/kg (rat)

LD50, dermal:

8000 mg/kg (rabbit)

LC50, inhalation:

No information available.

Primary effects

Irritant effect on skin:

next page: 8

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



64732 N-Methyl-2-Pyrrolidone

Page 8

Revised edition: 11.06.2024

Version: 5

Printed: 15.10.2024

Causes skin irritation.

Irritant effect on eyes:

Causes serious eye irritation.

Inhalation:

No information available.

Ingestion:

No information available

Sensitization:

No sensitizing effects known.

Mutagenicity:

No relevant data found.

Reproductive toxicity:

May damage the unborn child.

Carcinogenicity:

No relevant data found.

Teratogenicity:

No relevant data found.

Specific target organ toxicity (STOT):

Single exposure: may cause respiratory irritation.

Repeated exposure: no organospecific toxicity expected.

Aspiration hazard:

No risk of aspiration.

11.2. Information on other Hazards

Endocrine Disrupting Properties: no information available.

12. Ecological Information

12.1. Aquatic Toxicity

Not hazardous to the aquatic environment.

Fish toxicity:

*LC50: > 500 mg/l (96h, *Oncorhynchus mykiss*)*

Daphnia toxicity:

EC50: > 1000 mg/l

*NOEC: 12.5 mg/l (21d, *Daphnia magna*; ECHA)*

Bacteria toxicity:

No data available.

Algae toxicity:

ErC50: 51.4 mg/l (72h)

12.2. Persistency and Degradability

Readily biodegradable.

Oxygen consumption: 73 % (28d)

12.3. Bioaccumulation

Does not accumulate substantially in living organisms.

next page: 9

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



64732 N-Methyl-2-Pyrrolidone

Page 9

Revised edition: 11.06.2024

Version: 5

Printed: 15.10.2024

12.4. Mobility

Henry Constant: 0 Pa.m³/mol (20°C)

Adsorption: Adsorption coefficient (Organic Carbon): 0.87

12.5. Results of PBT- und vPvP Assessment

No data available.

12.6. Endocrine Disrupting Properties

This substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) No. 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1 % or higher.

12.7. Other Adverse Effects

Water hazard class:

1, slightly hazardous

Behaviour in sewage systems:

Further ecological effects:

Theoretical oxygen demand (ThOD) with nitrification: 2.502 mg/mg

Theoretical oxygen demand (ThOD): 1937 mg/mg

Theoretical carbon dioxide (ThCO₂): 2.22 mg/mg

Biotic / abiotic: > 90 %

AOX Value:

13. Disposal Considerations

13.1. Waste Treatment Methods

Product:

Must be disposed as hazardous waste. Do not allow product to reach sewage system.

Dispose of according to official national and local regulations.

European Waste Code (EWC):

Uncleaned packaging:

Dispose of according to official local regulations.

Waste Code No.:

14. Transport Information

14.1. UN Number

ADR, IMDG, IATA

14.2. UN Proper Shipping Name

ADR/RID:

No hazardous goods according to ADR / DOT (US) (land transportation).

IMDG/IATA:

Not hazardous goods

14.3. Transport Hazard Classes

ADR Class:

not applicable

next page: 10

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



64732 N-Methyl-2-Pyrrolidone

Page 10

Revised edition: 11.06.2024

Version: 5

Printed: 15.10.2024

Hazard no.:

Classification code:

Tunnel restriction code:

IMDG Class (sea):

not applicable

Hazard no.:

EmS No.:

IATA Class:

not applicable

Hazard no.:

14. 4. Packaging Group

ADR/RID:

not applicable

IMDG:

IATA:

14. 5. Environmental Hazards

None

14. 6. Special Precautions for User

not applicable

14. 7. Maritime Transport in Bulk according to IMO Instruments

not applicable

14. 8. Further Information

15. Regulatory Information

15. 1. Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

Water hazard class:

1, slightly hazardous for water (German Regulation)

Local regulations on chemical accidents:

Seveso III Directive: not applicable under Directive 2012/18/EC.

Employment restrictions:

The employment restrictions for young workers in accordance with the Youth Employment Protection Law are to be observed.

The employment restrictions for expectant and nursing mothers in accordance with the Maternity Protection Guideline are to be observed.

Restriction and prohibition of application:

EC. REACH, Section XVII, Restrictions on the Manufacture, Placing on the Market and Use of Certain Dangerous Substances, Preparations and Articles: Listed 3, 30, 71, 72, 75 (1-Methyl-2-pyrrolidone, CAS 872-50-4)

Technical instructions on air quality:

5.2.5.: Organic substances: > 25 wt.-% (m>=0.50 kg/h: conc. 50

next page: 11

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



64732 N-Methyl-2-Pyrrolidone

Page 11

Revised edition: 11.06.2024

Version: 5

Printed: 15.10.2024

mg/m³)

5.2.7.1.3: *Reproductive toxic substances: > 25 wt-%*

15.2. Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this product.

15.3. Further Information

EC. REACH, Annex XIV, Candidate List of Substances of very High Concern (SVHC): 1-Methyl-2-pyrrolidone, Reproduction toxicity A57c

Regulation (EU) No. 2019/1148, Annex I - Restricted Explosives Precursors (upper limit value for the purpose of licensing under Article 5(3)): None of the ingredients is listed.

Regulation (EU) No. 2019/1148, Annex II - Reportable Explosives Precursors: None of the ingredients is listed.

Regulation (EC) 273/2004, On Drug Precursors, Category 3: None of the ingredients is listed.

Regulation (EC) No. 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors: not forbidden and/or not restricted

RoHS Directive 2011/65/EC on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS): not listed.

VOC Content: 100 %

16. Other Information

This product should be stored, handled and used in accordance with good hygiene practices and in conformity with any legal regulations. This information contained herein is based on the present state of knowledge and is intended to describe our product from the point of view of safety requirements. It should be therefore not be construed as guaranteeing specific properties.