



## Material Safety Data Sheet

Material Name: SAFETY-KLEEN N-METHYL PYRROLIDONE

ID: 82329

### \*\*\* Section 1 - Chemical Product and Company Identification \*\*\*

**Product Code:** 1021794, 1024794

**Product Use:** Cleaning agent. If this product is used in combination with other products, refer to the Material Safety Data Sheet for those products.

**Synonyms:** 2-Pyrrolidinone, 1-methyl-; N-Methylpyrrolidinone; 1-Methyl pyrrolidinone; 1-Methylpyrrolidone; NMP  
Safety-Kleen Systems, Inc. Phone: 1-800-669-5740

5360 Legacy Drive  
Building 2, Suite 100  
Plano, TX 75024

Emergency # 1-800-468-1760  
www.safety-kleen.com

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PREPARED BY: Product MSDS Coordinator APPROVED BY: MSDS Task Force

### \*\*\* Section 2 - Hazardous Identification \*\*\*

#### EMERGENCY OVERVIEW

**Appearance**

Clear, colorless to pale yellow liquid with an ammonia-like odor

**Signal Word**

CAUTION!

**Physical Hazards**

Combustible liquid and vapor.

**Health Hazards**

May be harmful if inhaled.  
May be harmful if absorbed through skin.  
May be harmful if swallowed.  
May irritate the respiratory tract (nose, throat, and lungs), eyes, and skin.  
May cause burns to the eyes.  
May cause central nervous system effects.

#### POTENTIAL HEALTH EFFECTS

**Inhalation (Breathing)**

May be harmful if inhaled. High concentrations of vapor or mist may irritate the respiratory tract (nose, throat, and lungs). High concentrations of vapor or mist may cause nausea, vomiting, headaches, dizziness, loss of coordination, numbness, and other central nervous system effects.

**Eyes**

May be severely irritating and cause burns to the eyes.

**Skin**

May cause irritation. This product may be absorbed through the skin and cause harm as noted under **INHALATION (BREATHING)**.

**Ingestion (Swallowing)**

May be harmful if swallowed. May cause throat irritation, nausea, vomiting, and central nervous system effects as noted under **INHALATION (BREATHING)**. Breathing product into the lungs during ingestion or vomiting may cause lung injury and possible death.

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## Medical Conditions Aggravated by Exposure

Individuals with pre-existing respiratory tract (nose, throat, and lungs), central nervous system, eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

## Chronic

Prolonged or repeated inhalation may cause toxic effects as noted under **INHALATION (BREATHING)**. Prolonged or repeated eye contact may cause inflammation of the membrane lining the eyelids and covering the eyeball (conjunctivitis). Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling (dermatitis). Prolonged or repeated inhalation/ingestion may cause birth defects and/or other reproductive harm.

## Cancer Information

No known carcinogenicity. For more information, see **SECTION 11: CARCINOGENICITY**.

## Environmental Hazards

Not expected to be harmful to aquatic life. Also see **SECTION 12: ECOLOGICAL INFORMATION**.

### \*\*\* Section 3 - Composition / Information on Ingredients \*\*\*

CAS	Component	Percent
872-50-4	1-Methyl-2-pyrrolidone	99-100

### \*\*\* Section 4 - First Aid Measures \*\*\*

#### Inhalation (Breathing)

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Someone should stay with victim. Get medical attention if breathing difficulty persists.

#### Eyes

If irritation or redness from exposure to vapor develops, move away from exposure into fresh air. Upon contact, immediately flush eyes with plenty of lukewarm water, holding eyelids apart, for 15 minutes. Get medical attention.

#### Skin

Remove affected clothing and shoes. Wash skin thoroughly with soap and water. Get medical attention if irritation or pain develops or persists. Wash contaminated clothing before reuse.

#### Ingestion (Swallowing)

Do NOT induce vomiting. Immediately get medical attention. Call 1-800-468-1760 for additional information. If spontaneous vomiting occurs, keep head below hips to avoid breathing the product into the lungs. Never give anything by mouth to an unconscious person.

#### Notes to Physicians

Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of incident. Call 1-800-468-1760 for additional information.

### \*\*\* Section 5 - Fire Fighting Measures \*\*\*

#### Hazardous Combustion Products

Decomposition and combustion materials may be toxic. Burning may produce carbon monoxide and other unidentifiable organic compounds.

#### Conditions of Flammability

Heat, sparks, or flame.

#### Extinguishing Media

Water spray, carbon dioxide, dry chemical, or alcohol resistant foam.

#### Protective Equipment For Firefighting

A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

#### Fire Fighting Equipment/Instructions

Keep storage containers cool with water spray.

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NFPA Ratings: Health: 2 Fire: 2 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

## Fire and Explosion Hazards

Vapor explosion hazard indoors, outdoors, or in sewers. Vapor may travel to ignition source and flashback. Vapors will spread along the ground and collect in low or confined areas. Heated containers may rupture. "Empty" containers may retain residue and can be dangerous. Product is not sensitive to mechanical impact. Product may be sensitive to static discharge, which could result in fire or explosion.

## \* \* \* Section 6 - Accidental Release Measures \* \* \*

Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean, sparkproof tool into a sealable container for disposal. Additionally, for large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces. Dike far ahead of liquid spill for collection and later disposal.

## \* \* \* Section 7 - Handling and Storage \* \* \*

### Handling Procedures

Keep away from heat, sparks, or flame. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean, sparkproof tools and explosion-proof equipment. When transferring product, metal containers, including trucks and tank cars, should be grounded and bonded. Do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes, skin, clothing, and shoes. Do not smoke when using this product.

### Shipping and Storing

Keep container tightly closed when not in use and during transport. Store containers in a cool, dry place. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Keep containers away from heat, flame, sparks, static electricity, or other sources of ignition. Empty product containers may retain product residue and can be dangerous. See **SECTION 14: TRANSPORTATION INFORMATION** for Packing Group information.

## \* \* \* Section 8 - Exposure Controls / Personal Protection \* \* \*

### Exposure Guidelines

#### Component Exposure Limits

ACGIH, OSHA, and NIOSH have not developed exposure limits for any of this product's components.

#### Engineering Controls

Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below applicable exposure limits. Where explosive mixtures may be present, equipment safe for such locations should be used.

#### Personal Protective Equipment: Respiratory

Use NIOSH-certified, full-face air-supplied (self-contained breathing apparatus or air-line respirators) respiratory protective equipment when concentration of vapor or mist exceeds applicable exposure limits. Selection and use of respiratory protective equipment should be in accordance in the USA with OSHA General Industry Standard 29 CFR 1910.123; or in Canada with CSA Standard Z94.4.

#### Personal Protective Equipment: Eyes/Face

Where eye contact is likely, wear chemical goggles; contact lens use is not recommended.

#### Personal Protective Equipment: Skin

Where skin contact is likely, wear laminate (Ansell Edmont Barrier®, North Silver Shield®, Safety 4 4h®, butyl rubber, or equivalent protective gloves; use of neoprene, polyvinyl chloride (PVS), latex, or equivalent gloves is not recommended.

To avoid prolonged or repeated contact where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, whole body suits, or other protective clothing.

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## Personal Protective Equipment: Personal Hygiene

Use good personal hygiene. Wash thoroughly with soap and water after handling product and before eating, drinking, or using tobacco products. Clean affected clothing, shoes, and protective equipment before reuse. Discard affected clothing, shoes, and/or protective equipment if they cannot be thoroughly cleaned. Discard leather articles, such as shoes, saturated with this product.

## Other Personal Protective Equipment

Where spills and splashes are likely, facilities storing or using this product should be equipped with an emergency eyewash and shower, both equipped with clean water, in the immediate work area.

## \*\*\* Section 9 - Physical & Chemical Properties \*\*\*

<b>Appearance/Odor :</b> Liquid, clear, colorless to pale yellow, ammonia-like odor	<b>pH:</b> Not applicable
<b>Boiling Point:</b> 396°F (202°C)	<b>Melting Point:</b> -11 °F (-24°C)
<b>Solubility (H2O):</b> Complete	<b>Specific Gravity:</b> 1.034 (water = 1) at 68°F (16°C)
<b>Density:</b> 8.6 LB/US gal (1030 g/l)	<b>Octanol/H2O Coeff.:</b> Not available
<b>Evaporation Rate:</b> Less than 0.06 (butyl acetate = 1)	<b>Molecular Weight:</b> 99
<b>Odor Threshold:</b> Not available	<b>Auto Ignition:</b> 655°F (346°C)
<b>LFL:</b> 1.3 VOL %	<b>Flash Point:</b> 199°F (93°C) Closed Cup
<b>UFL:</b> 9.5 VOL %	
<b>Vapor Pressure:</b> Not available	
<b>Freezing Point:</b> -11°F (-24°C)	
<b>Octanol/H2O Coeff.:</b> -0.46 at 77°F (25°C)	

## \*\*\* Section 10 - Chemical Stability & Reactivity Information \*\*\*

### Stability

Stable under normal temperatures and pressures.

### Incompatibility

Avoid acids, alkalis, oxidizing agents, light metals, aldehydes, or organic anhydrides.

### Reactivity

Polymerization is not known to occur under normal temperature and pressures. Not reactive with water.

### Hazardous Decomposition Products

None under normal temperatures and pressures. See also **SECTION 5: HAZARDOUS COMBUSTION PRODUCTS**.

### Conditions To Avoid

Keep away from heat, ignition sources and incompatible materials.

## \*\*\* Section 11 - Toxicological Information \*\*\*

### Toxicity Data

#### Component Analysis - LD50/LC50

##### 1-Methyl-2-pyrrolidone (872-50-4)

Inhalation LC50 Rat 3.1 mg/L 4 h; Oral LD50 Rat 3598 mg/kg; Dermal LD50 Rat 2500 mg/kg; Dermal LD50 Rabbit >5000 mg/kg

### Acute Effects

May be harmful if inhaled. High concentrations of vapor or mist may irritate the respiratory tract (nose, throat, and lungs). High concentrations of vapor or mist may cause nausea, vomiting, headaches, dizziness, loss of coordination, numbness, or other central nervous system effects. May be severely irritating and cause burns to the eyes. May cause skin irritation. N-methyl-2-pyrrolidone may be absorbed through the skin and cause harm as noted under inhalation. May be harmful if swallowed. May cause throat irritation, nausea, vomiting, and central nervous system effects as noted under inhalation. Breathing product into the lungs during ingestion or vomiting may cause lung injury and possible death.

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## Repeated Dose Effects

Prolonged or repeated inhalation may cause toxic effects as noted under Acute Inhalation. Prolonged or repeated eye contact may cause inflammation of the membrane lining the eyelids and covering the eyeball (conjunctivitis). Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling (dermatitis).

Experimental evidence suggests that this product does not cause mutagenesis.

N-Methyl-2-pyrrolidinone has demonstrated animal effects of reproductive toxicity. Also see **SECTION 15: CALIFORNIA**.

N-Methyl-2-pyrrolidinone has demonstrated animal effects of teratogenicity.

## Carcinogenicity

### Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

### Target Organ Effects

No information available for the product.

## Mutagenicity

Prolonged or repeated inhalation/ingestion may cause birth defects and/or other reproductive harm.

## Teratogenicity

N-Methyl-2-pyrrolidinone has demonstrated animal effects of teratogenicity.

## \* \* \* Section 12 - Ecological Information \* \* \*

### Ecotoxicity

Not expected to be harmful to aquatic life.

### Component Analysis - Ecotoxicity - Aquatic Toxicity

#### 1-Methyl-2-pyrrolidone (872-50-4)

Duration/Test/Species	Concentration/Conditions/Notes
96 Hr LC50 Lepomis macrochirus	832 mg/L [static]
96 Hr LC50 Leuciscus idus	4000 mg/L [static]
96 Hr LC50 Pimephales promelas	1072 mg/L [static]
96 Hr LC50 Poecilia reticulata	1400 mg/L [static]
72 Hr EC50 Desmodemus subspicatus	>500 mg/L

### Persistence/Degradability

No information available for the product.

### Bioaccumulation/Accumulation

No information available for the product.

### Mobility in Environmental Media

No information available for the product.

### Other Adverse Effects

No information available for the product.

## \* \* \* Section 13 - Disposal Considerations \* \* \*

### Disposal Instructions

Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Safety-Kleen regarding proper recycling or disposal.

### US EPA Waste Number & Descriptions

This product, if discarded, is not expected to be a characteristic or listed hazardous waste. Processing, use, or contamination by the user may change the waste code(s) applicable to the disposal of this product.

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## \*\*\* Section 14 - Transportation Information \*\*\*

### Emergency Response Guide Number

128

Reference *.North American Emergency Response Guidebook*

### DOT

**Shipping Name:** Combustible liquid, n.o.s. (Contains: 1-Methyl-2-pyrrolidone)

**UN/NA #:** NA1993 **Hazard Class:** Combustible liquid **Packing Group:** III

**Required Label(s):** None **Required Placards:** Class 3, NA 1993

**Additional Info.:** The above transportation classification is for Bulk Packages (>119 Gallons)

For Non-bulk Packages (<120 Gallons), the transport classification is:

**Shipping Name:** Cleaning compounds (1-methyl-2-pyrrolidone)(Not U.S.D.O.T. hazardous material).

**UN/NA #:** None. **Hazard Class:** None. **Packing Group:** None. **Required Label(s):** None.

### TDG

**Shipping Name:** Not regulated as a dangerous good for transport.

### IATA Information

No Classification Assigned.

### IMDG Information

No Classification Assigned.

## \*\*\* Section 15 - Regulatory Information \*\*\*

### Volatile Organic Compounds (As Regulated):

100 WT%; 8.6 LB/US gal: 1030 g/l

As per 40 CFR Part 51.100(s)

### SARA Sections 311/312

This product poses the following health hazards as defined in 40 CFR Part 370 and is subject to the requirements of sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):

Immediate (Acute) Health Hazard

Delayed (Chronic) Health Hazard

Fire Hazard

### SARA 302/304

#### Component Analysis

Based on the ingredients listed in SECTION 3, this product does not contain any "extremely hazardous substances" listed pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 302 or Section 304 as identified in 40 CFR Part 355, Appendix A and B.

### SARA Section 313

This product does contain a "toxic" chemical subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

Material	CAS
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N-Methyl-2-pyrrolidinone	872-50-4
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#### Component Analysis

This product does contain a "toxic" chemical subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

**1-Methyl-2-pyrrolidone (872-50-4)** 1.0 % de minimis concentration

### CERCLA

#### Component Analysis

Based on the ingredients listed in SECTION 3, this product does not contain any "hazardous substances" listed under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) in 40 CFR Part 302, Table 302.4.

### TSCA

The component of this product is listed on, or is automatically included as "naturally occurring chemical substances" on, or is exempted from the requirement to be listed on, the TSCA Inventory.

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## Component Analysis

Component	CAS #	TSCA
1-Methyl-2-pyrrolidone	872-50-4	Yes

## State Regulations

This product does not contain detectable amounts of any chemical known to the State of California to cause cancer.

This product contains detectable amount of N-Methyl-2-pyrrolidinone CAS 872-50-4. WARNING: This chemical is known to the State of California to cause birth defects or other reproductive harm.

## U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	MA	MN	NJ	PA	CA
1-Methyl-2-pyrrolidone	872-50-4	No	Yes	No	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause birth defects or other reproductive harm.

## Canadian Regulations

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by the CPR.

## Component Analysis

Component	CAS #	CAN
1-Methyl-2-pyrrolidone	872-50-4	DSL

## Canadian WHMIS Information

Class B3 - Combustible Liquid Class D2B - Irritating to eyes and skin. Class D2A - Chronic toxic effects.

## Canadian Environmental Protection Act (CEPA)

The component of this product is listed on, or is automatically included as "substance occurring in nature" on, or is exempted from the requirements to be listed on, the Canadian Domestic Substances List (DSL).

## \* \* \* Section 16 - Other Information \* \* \*

## Label/Other Information

Not available.

## Revision Information

Regulatory Update. Regulatory update, updated to ANSI Z400.1-2004 format. This MSDS has been revised in the following sections: Section 1 (Dates), Section 2 (Composition updated), Section 3 (switched to Emergency Overview), Section 4 (Phone Numbers), Section 5 (Fire Fields), Section 8 (Exposure Limits added), Section 11 (Toxicity fields updated), Section 12 (Ecotoxicity, fields updated), Section 16 (Revision Information).

## Disclaimer

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either expressed or implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to the information or the product to which the information refers. The data contained on this sheet apply to the product as supplier to the user.

End of Sheet 82329