

# Safety Data Sheet



## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name:** **N-METHYL-2-PYRROLIDONE**

**Other name(s):** 1-Methyl-2-pyrrolidone; 1-Methylpyrrolidone; N-Methyl pyrrolidinone;  
1-Methylazacyclopentan-2-one; NMP; METAL CLEANER 800; ZIP CLEAN 800.

**Recommended Use of the Chemical and Restrictions on Use** Process chemical.

**Supplier:** Bermuda Industrial Supplies  
**ABN:** 71 149 716 003  
**Street Address:** 16/1 Cowpasture Place  
Wetherill Park  
NSW 2164  
Australia  
**Telephone Number:** 02 9604 4344  
**Emergency Telephone:** **02 9604 4344**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

## 2. HAZARDS IDENTIFICATION

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail; NON-DANGEROUS GOODS.

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

### Classification of the chemical:

Flammable liquids - Category 4  
Skin Irritation - Category 2  
Eye Irritation - Category 2A  
Specific target organ toxicity (single exposure) - Category 3  
Toxic to Reproduction - Category 1B

**SIGNAL WORD:** DANGER



### Hazard Statement(s):

H227 Combustible liquid.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H360 May damage fertility or the unborn child.

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## Precautionary Statement(s):

### Prevention:

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P210 Keep away from heat, sparks, open flames, hot surfaces. No smoking.
- P261 Avoid breathing mist, vapours, spray.
- P264 Wash hands thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves / protective clothing / eye protection / face protection.
- P281 Use personal protective equipment as required.

### Response:

- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- P321 Specific treatment (see First Aid Measures on Safety Data Sheet).
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P362 Take off contaminated clothing and wash before reuse.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P370+P378 In case of fire: Use extinguishing media as outlined in Section 5 of this Safety Data Sheet to extinguish.

### Storage:

- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P405 Store locked up.

### Disposal:

- P501 Dispose of contents and container in accordance with local, regional, national, international regulations.

**Poisons Schedule (SUSMP):** S6 Poison.

## 3. COMPOSITION AND INFORMATION ON INGREDIENTS

Components	CAS Number	Proportion	Hazard Codes
N-methyl-2-pyrrolidone	872-50-4	>=99.8%	H315 H319 H335 H360D

## 4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor.

### Inhalation:

Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discolouration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

### Skin Contact:

If skin or hair contact occurs, immediately remove any contaminated clothing and wash skin and hair thoroughly with running water. If swelling, redness, blistering or irritation occurs seek medical assistance.

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## Eye Contact:

If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre or a doctor, or for at least 15 minutes.

## Ingestion:

Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Never give anything by the mouth to an unconscious patient. Seek immediate medical assistance.

## Indication of immediate medical attention and special treatment needed:

Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

### Suitable Extinguishing Media:

Fine water spray, normal foam, dry agent (carbon dioxide, dry chemical powder). Water or foam may cause frothing.

### Unsuitable Extinguishing Media:

Water jet.

### Specific hazards arising from the chemical:

Combustible liquid. May form flammable vapour mixtures with air. Vapour may travel a considerable distance to source of ignition and flash back.

### Special protective equipment and precautions for fire-fighters:

On burning will emit toxic fumes, including those of oxides of nitrogen, and carbon monoxide. Keep containers cool with water spray. If safe to do so, remove containers from path of fire. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or products of combustion.

## 6. ACCIDENTAL RELEASE MEASURES

### Emergency procedures/Environmental precautions:

Shut off all possible sources of ignition. Clear area of all unprotected personnel. If contamination of sewers or waterways has occurred advise local emergency services.

### Personal precautions/Protective equipment/Methods and materials for containment and cleaning up:

Work up wind or increase ventilation. Wear protective equipment to prevent skin and eye contact and breathing in vapours. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal. Use non-sparking tools.

## 7. HANDLING AND STORAGE

Classified as a C1 (COMBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS 1940. Refer to State Regulations for storage and transport requirements.

This material is a Scheduled Poison S6 and must be stored, maintained and used in accordance with the relevant regulations.

### Precautions for safe handling:

Avoid skin and eye contact and breathing in vapour. May form flammable vapour mixtures with air. Keep out of reach of children.

### Conditions for safe storage, including any incompatibilities:

Store in a cool, dry, well ventilated place and out of direct sunlight. Store away from sources of heat or ignition. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Keep containers closed when not in use - check regularly for leaks.

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Issued: 29/10/2016

Version: 1.0

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

1-Methyl-2-pyrrolidone: 8hr TWA = 103 mg/m<sup>3</sup> (25 ppm), 15 min STEL = 309 mg/m<sup>3</sup> (75 ppm), Sk

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

STEL (Short Term Exposure Limit) - the airborne concentration of a particular substance calculated as a time-weighted average over 15 minutes, which should not be exceeded at any time during a normal eight hour work day. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.

'Sk' (skin) Notice - absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

### Appropriate engineering controls:

Ensure ventilation is adequate to maintain air concentrations below Workplace Exposure Standards. Vapour heavier than air - prevent concentration in hollows or sumps. DO NOT enter confined spaces where vapour may have collected. Keep containers closed when not in use.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

### Individual protection measures, such as Personal Protective Equipment (PPE):

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, RESPIRATOR.



Wear overalls, chemical goggles and impervious gloves. Use with adequate ventilation. If determined by a risk assessment an inhalation risk exists, wear an organic vapour/particulate respirator or an air supplied mask meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Physical state:</b>	Clear Liquid
<b>Colour:</b>	Colourless
<b>Odour:</b>	Amine - like
<b>Molecular Formula:</b>	C5H9NO
<b>Solubility:</b>	Miscible in water.
<b>Specific Gravity:</b>	1.03 @25°C
<b>Relative Vapour Density (air=1):</b>	3.4
<b>Vapour Pressure (20 °C):</b>	0.3 mm Hg
<b>Flash Point (°C):</b>	91 (Closed cup)
<b>Flammability Limits (%):</b>	1.3-9.5
<b>Autoignition Temperature (°C):</b>	245
<b>Boiling Point/Range (°C):</b>	204
<b>pH:</b>	7-8
<b>Viscosity:</b>	1.7 mPa.s @20°C
<b>Evaporation Rate:</b>	0.03 (n-butyl acetate = 1)
<b>Freezing Point/Range (°C):</b>	-24.2

## 10. STABILITY AND REACTIVITY

<b>Reactivity:</b>	Hygroscopic: absorbs moisture or water from surrounding air.
<b>Chemical stability:</b>	Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. On exposure to air, NMP is slowly oxidized with the formation of hydroperoxides; this process is accelerated by sunlight.
<b>Possibility of hazardous reactions:</b>	Hazardous polymerisation will not occur.
<b>Conditions to avoid:</b>	Avoid exposure to direct sunlight. Avoid exposure to moisture. Avoid exposure to humidity.
<b>Incompatible materials:</b>	Incompatible with strong oxidising agents , strong reducing agents , moisture .
<b>Hazardous decomposition products:</b>	Carbon monoxide. Oxides of nitrogen.

## 11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

<b>Ingestion:</b>	No adverse effects expected, however, large amounts may cause nausea and vomiting.
<b>Eye contact:</b>	An eye irritant.
<b>Skin contact:</b>	Contact with skin will result in irritation. Will have a degreasing action on the skin. Repeated or prolonged skin contact may lead to irritant contact dermatitis. Can be absorbed through the skin with resultant adverse effects.
<b>Inhalation:</b>	Breathing in vapour will produce respiratory irritation.
<b>Acute toxicity:</b>	
Oral LD50 (rat):	3914 mg/kg

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Dermal LD50 (rat): >5000 mg/kg  
Inhalation LC50 (rat): >5.1 mg/L/4h

**Skin corrosion/irritation:** Irritant (rabbit).

**Serious eye damage/irritation:** Irritant (rabbit).

**Chronic effects:** Non-mutagenic based on animal studies. Non-mutagenic based on mammal cell tests. Non-carcinogenic based on animal studies. May damage fertility or the unborn child. May cause damage to the testes. For N-Methyl-2-pyrrolidone: In a two-year rat feeding study, males showed signs of chronic progressive nephropathy; no treatment related tumors were seen. At very high repeated inhalation doses (1.0 mg/L), NMP caused focal pneumonia, bone marrow hypoplasia and atrophy of lymphoid tissue, 0.5 mg/L was the no effect level.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity** Avoid contaminating waterways.

**Persistence/degradability:** The material is readily biodegradable.

96hr LC50 (rainbow trout): >500 mg/L

## 13. DISPOSAL CONSIDERATIONS

### **Disposal methods:**

Refer to Waste Management Authority. Dispose of contents and container in accordance with local, regional, national, international regulations.

## 14. TRANSPORT INFORMATION

### **Road and Rail Transport**

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail; NON-DANGEROUS GOODS.

### **Marine Transport**

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; NON-DANGEROUS GOODS.

### **Air Transport**

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; NON-DANGEROUS GOODS.

## 15. REGULATORY INFORMATION

### **Classification:**

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

### **Classification of the chemical:**

Flammable liquids - Category 4

Skin Irritation - Category 2

Eye Irritation - Category 2A

Specific target organ toxicity (single exposure) - Category 3

Toxic to Reproduction - Category 1B

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## Hazard Statement(s):

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H315 Causes skin irritation.  
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H335 May cause respiratory irritation.  
H360 May damage fertility or the unborn child.

**Poisons Schedule (SUSMP):** S6 Poison.

This material is listed on the Australian Inventory of Chemical Substances (AICS).

## 16. OTHER INFORMATION

Supplier Material Safety Data Sheet; 04/ 2011.

'Registry of Toxic Effects of Chemical Substances'. Ed. D. Sweet, US Dept. of Health & Human Services: Cincinnati, 2015.

This safety data sheet has been prepared by Bermuda Industrial Supplies & SDS Services.

### Reason(s) for Issue:

5 Yearly Revised Primary SDS

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Bermuda Industrial Supplies cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Bermuda representative or Bermuda Industrial Supplies at the contact details on page 1.

Bermuda Industrial Supplies' responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.