

Safety Data Sheet

Methyl (N-) Pyrrolidone Electronic Grade

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Methyl (N-) Pyrrolidone Electronic Grade

Synonyms/Generic Names: N-Methyl-2-pyrrolidone; 1-Methyl-2-pyrrolidone; NMP; M-PYROL™; N-Methyl Pyrrolidone

Product Number: 3491

Product Use: Industrial, Manufacturing or Laboratory use

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Call: 920-623-2140 (Monday-Friday 8:00-4:30)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

Hazards Not Otherwise Classified (HNOC): Flammable Liquid

Target Organs: Bone marrow, Thymus, Spleen, Lymphatic system.

Signal Words: Danger

Pictograms:



GHS Classification:

Flammable liquids	Category 4
Skin irritation	Category 2
Eye irritation	Category 2A
Reproductive toxicity	Category 1B
Specific target organ toxicity- single exposure- respiratory system	Category 3

GHS Label Elements, including precautionary statements:

Hazard Statements:

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

Precautionary Statements:

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 dust/fume/gas/mist/vapors/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.
P302+P352	IF ON SKIN: Wash with plenty of 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.
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.
P370+P378	In case of fire: Use appropriate media to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container in accordance with local regulations.

Potential Health Effects

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

NFPA Ratings

Health	2
Flammability	2
Reactivity	0
Specific hazard	Not Available

HMIS Ratings

Health	2
Fire	2
Reactivity	0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
n-Methyl Pyrrolidone	>99	872-50-4	212-828-1	C ₅ H ₉ NO	99.13 g/mol

4. FIRST-AID MEASURES

Eyes	Rinse with plenty of water for at least 15 minutes and seek medical attention.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin	Flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention.
Ingestion	Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention.

5. FIREFIGHTING MEASURES

Suitable (and unsuitable)	For small (incipient) fires, use media such as "alcohol" foam, dry
----------------------------------	--

extinguishing media	chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	Emits toxic fumes (carbon oxides, nitrogen oxides) under fire conditions. Vapor can cause flash fire. Vapors are heavier than air and may travel long distances along the ground to an ignition source and flash back. (See also Stability and Reactivity section)

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to a federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Absorb spill with noncombustible absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition- No smoking. Take measures to prevent the buildup of electrostatic charge. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a cool, dry well ventilated area. Keep in a tightly closed plainly-labeled container. Keep away from heat, sparks and flame. Keep away from incompatible materials (see section 10 for incompatibilities). Store under inert gas. Moisture sensitive.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
n-Methyl-2-pyrrolidone	10 ppm	WEEL	AIHA

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

Personal Protection

Eyes	Wear chemical safety glasses with a face shield for splash protection.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.

Skin	Wear neoprene or rubber gloves, apron and other protective clothing appropriate to the risk of exposure.
Other	Not Available

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling. Have supplies and equipment for neutralization and running water available

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Colorless to light yellow liquid
Odor	Amine odor
Odor threshold	Not Available
pH	7.7-8
Melting point/freezing point	-24°C (-11.2°F)
Initial boiling point and boiling range	202°C (396°F)
Flash point	~91°C to 93°C (195.8°F to 199.4°F)
Evaporation rate	Not Available
Upper/lower flammability or explosive limit	LEL: 1.3% UEL: 9.5%
Vapor pressure	(@ 20°C) 0 mmHg
Vapor density	(air=1) 3.4
Relative density	1.028 g/mol at 25°C (77°F)
Solubility (ies)	Soluble
Partition coefficient: n-octanol/water	Low Pow: -0.46
Auto-ignition temperature	346.11°C (655°F)
Decomposition temperature	Not available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Heat, flames and sparks, moisture, extremes of temperature and direct sunlight. Incompatibilities.
Incompatible Materials	Oxidizing agents, reducing agents, acids, alkalis, moisture
Hazardous Decomposition Products	Carbon oxides, nitrogen oxides.

11. TOXICOLOGICAL INFORMATION**Acute Toxicity***n*-Methyl Pyrrolidone

Skin	LD50 Dermal- rabbit-8,000 mg/kg
Eyes	Not Available
Respiratory	LDLO Inhalation- rat- 4 h- > 5100 ppm
Ingestion	LD50 Oral- rat- 3,914 mg/kg

Carcinogenicity

IARC	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified

	as a carcinogen or potential carcinogen by OSHA.
--	--

Signs & Symptoms of Exposure

Skin	Skin irritation
Eyes	Eye irritation
Respiratory	Burning sensation of mucous membranes, dizziness, difficulty breathing, drowsiness, disorientation, headache, narcosis, vertigo, convulsions, and coma.
Ingestion	Nausea, vomiting, staggering gait, delirium, weakness.

Chronic Toxicity	May cause damage to the following organs: blood, kidneys, lymphatic system, Urinary system, bone marrow.
Teratogenicity	Damage to fetus is possible
Mutagenicity	Mutagenic for bacteria and/or yeast
Embryotoxicity	Not Available
Specific Target Organ Toxicity	Not Available
Reproductive Toxicity	Not Available
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

n-Methyl Pyrrolidone

Aquatic Vertebrate	Aquatic fish; LC50- other fish- 4,000 mg/l- 96 h LC50- Leuciscus idus (Golden orfe)- > 500 mg/l – 96 h
Aquatic Invertebrate	EC50- Daphnia magna (Water flea) - > 1,000 mg/l – 24 h
Terrestrial	Not Available

Persistence and Degradability	Biodegradability Result: 90%- Readily biodegradable
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Not Available

13. DISPOSAL CONSIDERATIONS

Waste Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORT INFORMATION

US DOT	Not Dangerous Goods
TDG	Not Dangerous Goods
IDMG	Not Dangerous Goods
Marine Pollutant	No
IATA/ICAO	Not Dangerous Goods

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA Active inventory.
DSL / NDSL	All ingredients are listed on the DSL inventory.
California Proposition 65	Listed: N-methyl-2-pyrrolidone
Massachusetts: Toxic or Hazardous Substance List, Right to Know	Listed: 1-methyl-2-pyrrolidone
New Jersey: Right to Know Hazardous Substance List	Listed: 1-methyl-2-pyrrolidone
Pennsylvania: Hazardous Substance List	Listed: 2-Pyrrolidinone, 1-Methyl-
Rhode Island: Hazardous Substance List	Not Listed
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Fire Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 312	Fire Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 313	Listed: N-methyl-2-pyrrolidone
WHMIS Canada	Class B3: Flammable and combustible material- Combustible liquid Class D2B: Poisonous and infectious material- Other effects- Toxic

16. OTHER INFORMATION

Revision	Date
Created	11/23/2020
Revised	10/27/2021

Disclaimer: The information provided in this Safety Data Sheet ("SDS") is correct to the best of our knowledge, information, and belief at the date of publication. The information in this SDS relates only to the specific Product identified under Section 1, and does not relate to its use in combination with other materials or products, or its use as to any particular process. Those handling, storing, or using the Product should satisfy themselves that they have current information regarding the particular way the Product is handled, stored or used and that the same is done in accordance with federal, state and local law. WE DO NOT MAKE ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION) WARRANTIES WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN OR WITH RESPECT TO FITNESS FOR ANY PARTICULAR USE. WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, INJURY, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THIS PRODUCT.