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Material Safety Data Sheet

N-Ethyl-2-Pyrrolidone

Section 1: Chemical Product and Company Identification

Molecular formula: C₆H₁₁NO

CAS Nr: 2687-91-4

EINECS: 220-250-6

Molecular weight: 2687-91-4.mol

Chemical family: lactam

Synonyms: 1-ethyl-2-pyrrolidinon; 1-ethyl-pyrrolidin-2-one; 2-Pyrrolidinone, 1-ethyl-; Agsol Ex2; ethyl-2-pyrrolidone; N-Ethyl-2-pyrrolidinone; N-Ethylpyrrolidinone; N-Ethylpyrrolidone

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Section 2: Composition and Information on Ingredients

Composition:

Name	CAS # %	By Weight
2-Pyrrolidinone, 1-ethyl-	2687-91-4	≥ 99.0%

Toxicological Data on Ingredients: Not applicable.

Section 3: Hazards Identification

Emergency overview

Harmful if swallowed.

Potential Health Effects

Eye:

Causes moderate eye irritation. May cause chemical conjunctivitis and corneal damage.

Skin:

Causes skin irritation. May cause cyanosis of the extremities.

Ingestion:

May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May be harmful if swallowed.

Inhalation:

Causes respiratory tract irritation. Can produce delayed pulmonary edema. Inhalation at high concentrations may cause CNS depression and asphyxiation.

Chronic:

Prolonged or repeated skin contact may cause dermatitis. Effects may be delayed.

Section 4: First Aid Measures

If inhaled:

remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Get medical attention.

If on skin:

Wash off with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

If in eyes:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

If swallowed:

Do not induce vomiting. If conscious, give 2 glasses of water. Get immediate medical attention.

Section 5: Fire and Explosion Data

Suitable extinguishing media:

Water spray, Alcohol foam, Dry chemical, Carbon dioxide

Combustion/Explosion Hazards

Combustible Liquid. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. Vapors may form explosive mixtures with air.

Special Protective Equipment For Fire-Fighters:

Wear self-contained breathing apparatus and protective suit.

Section 6: Accidental Release Measures

Personal precautions:
Wear suitable protective equipment.

Clean up:
Remove all sources of ignition. Soak up with inert absorbent material.

Section 7: Handling and Storage

Handling
Avoid contact with eyes. Wash thoroughly after handling.
Keep away from heat and flame.

Storage
Keep container tightly closed. Keep in a dry, cool place. Keep away from direct sunlight.

Section 8: Exposure Controls/Personal Protection

Engineering Measures:
Use only in well-ventilated areas.

Respiratory Protection:
Use only in well-ventilated areas.

Hand Protection:
Wear protective gloves.

Eye Protection:
Chemical resistant goggles must be worn. Face-shield

Exposure Limits:

Components:	ACGIH - Threshold Limit Values – Time Weighted Averages (TLV-TWA)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
2-Pyrrolidinone, 1-ethyl- 2687-91-4 (98)	No TLV/TWAEstablished	No TLV/TWAEstablished

Section 9: Physical and Chemical Properties

Physical State:	Liquid
Color:	Clear
Odor:	Slight Amine
Odor Threshold:	Not available
pH:	Not determined
Specific Gravity:	0.9930 @25°C (water=1)
Boiling Point (°F):	414.5 (212.5°C) @1013.25 hPa
Viscosity (Centipoise):	2.1 mPa_s@20°C
Melting/Freezing Point (°F):	<-184 (<-120°C)
Vapor Pressure:	0.18 hPa @20°C
Solubility:	Soluble in water
Flash Point (°F):	195.4 (90.8°C)

Section 10: Stability and Reactivity Data

Chemical Stability:

Stable under normal conditions.

Conditions to Avoid:

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Materials to Avoid:

Strong oxidizing agents, Reducing agents

Section 11: Toxicological Information

Toxicity Test:

Acute Oral Toxicity (LD50):

3200 mg/kg (Rat)

Acute Dermal Toxicity (LD50):

>2000 mg/kg (Rat)

Acute Inhalation Toxicity (LC50):

>5.1 mg/l (4 hour) (Rat)

Eye Irritation:

Severe eye irritation (Rabbit).

May cause irreversible eye damage

Skin Irritation:

Slight irritation (rabbit)

Sensitization:

Did not cause sensitization on laboratory animals

Mutagenicity:

In vivo tests did not show mutagenic effects In vitro tests did not show mutagenic effects

Teratogenicity:

Prenatal developmental toxicity observed in rats dermally exposed on gestation days 6-16 at doses toxic to the dams. Maternal NOAEL = 200 mg/kg/day, Prenatal development NOAEL = 400 mg/kg/day. Increased malformations were observed in fetuses of rabbits exposed by oral gavage on gestation days 6-28 at maternally toxic doses.

Maternal NOAEL = 60 mg/kg/day,

Prenatal NOAEL = 60 mg/kg/day.

Carcinogenicity:

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. 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. No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Other Information:

90 day oral study in rats doses 0,100,300 or 1000 mg/kg bw/day resulted in a NOAEL = 100mg/kg bw/day

Section 12: Ecological Information

Persistence and Degradability:

Readily biodegradable.

90-100% after 28 days

Ecotoxicity:

LC50= >464-999mg/L 96hour (Danio Rerio)

EC50=>104mg/L 48hour (Daphnia magna (Water flea))

EC50=>101mg/L 72hour (Algae)

Bioaccumulative Potential:

Does not bioaccumulate (log KOW = -0.2 @ 20°C)

Section 13: Disposal Considerations

Waste Disposal Methods:

Dispose of in accordance with local regulations.

Section 14: Transport Information

IATA

Not regulated as a hazardous material.

IMO

Not regulated as a hazardous material.

RID/ADR

Not regulated as a hazardous material.

Section 15: Other Regulatory Information

California Proposition 65

Carcinogens & Reproductive

Toxicity (CRT) List:

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

EPCRA (SARA Title III):

Not applicable

WHMIS Ingredient Disclosure List:

None of the components of this product is listed on WHMIS Ingredient Disclosure list.

Section 16: Other Information

NFPA Rating: HEALTH 2, FLAMMABILITY 2 , REACTIVITY 0.

HMIS RATING:

HEALTH 2*

FLAMMABILITY 2

PHYSICAL HAZARD 0

Prepared By:

Product Stewardship

MSDS sections updated:

References: Not available.

Other Special Considerations: Not available.

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