**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

**Contact Information for Emergency:** (0086) 551 65418678

**Hefei TNJ Chemical Industry Co., Ltd.**

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Site: www.tnjchem.com

### Section 2: Composition and Information on Ingredients

**Composition:**

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS # %</th>
<th>By Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Pyrrolidinone, 1-ethyl-</td>
<td>2687-91-4</td>
<td>≥ 99.0%</td>
</tr>
</tbody>
</table>

**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 asphixiation.

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:

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

Section 9: Physical and Chemical Properties

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

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**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

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**Section 12: Ecological Information**

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**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)

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### Section 13: Disposal Considerations

**Waste Disposal Methods:**
Dispose of in accordance with local regulations.

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### 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.

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### 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.

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### 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:**
The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if we have been advised of the possibility of such damages.