MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT & MANUFACTURER’S DETAILS

**PRODUCT NAME**: Pyridine-3-carboxaldehyde

**MANUFACTURER**

**FACTORY & REGISTERED OFFICE:** Jubilant Organosys Limited Bhartiagram, Gajraula District: Jyotiba Phuley Nagar Uttar Pradesh-244223, India
PHONE NO: +91-5924-252353 upto 60 Contact Department-Safety: Extension 298 FAX NO: 91-5924-252352
EMERGENCY PHONE: +91-5924-268141

**HEAD OFFICE:** Jubilant Organosys Limited Plot 1-A, Sector 16-A, Institutional Area, Noida, Uttar Pradesh-201301 India.
PHONE NO: +91-120-2516601 Contact department: EHS FAX NO: +91-120-2516629 Email: support@jubl.com

2. CHEMICAL IDENTIFICATION

- **CHEMICAL NAME**: 3-Pyridinecarboxaldehyde
- **SYNONYMS**: Nicotinaldehyde, Pyridine-3-carboxaldehyde
- **CHEMICAL CLASSIFICATION**: Aromatic Heterocyclic Compound
- **CHEMICAL FORMULA**: (C₅H₄N)CHO
- **C.A.S. NO.**: 500-22-1

3. HAZARD IDENTIFICATION & HEALTH HAZARD

- Irritant: Irritating to eye, respiratory system & skin.
- Ingestion may cause irritation to digestive tract.
- Light Sensitive, Air sensitive
- Flammable liquid and vapor

4. FIRST AID MEASURES

**Eye:**
Immediately flush eyes with water for at least 15 minutes by separating eyelids with fingers. Get medical help.

**Skin:**
Remove contaminated clothing and shoes. Flush skin with plenty of water and soap. Wash contaminated clothing before reuse.

**Inhalation:**
Remove the affected person(s) to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**Ingestion:**
Wash out mouth with water if person is conscious. Call a physician.
5. **FIRE FIGHTING MEASURES**

*Extinguishing media:*
Use water spray, dry chemical powder, carbon dioxide or chemical foam.

*Special fire fighting procedure:*
Wear protective clothing, wear self contained breathing apparatus.

*Unusual fire and explosion hazard:* Combustible liquid, vapour is heavier than air, can spread along the ground and collect in confined areas. Vapours may form explosive mixture with air, containers may explode when heated. During a fire, thermal decomposition or combustion may emit toxic gases.

6. **ACCIDENTAL RELEASE MEASURES**

- Wear self-contained breathing apparatus, appropriate clothing, chemical safety googles and heavy rubber gloves.
- Absorb spill with inert material (e.g. vermiculite, sand or earth) & collect in a closed container.
- Remove all sources of ignition.
- Vapour suppressant foam or water spray may be used to reduce vapours.

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**HANDLING AND STORAGE**

- Shut off all sources of ignition.
- Use spark proof tools
- Avoid breathing, vapour, gas.
- Avoid contact with skin & eyes
- Keep containers closed.
- Store in a cool, dry place away from incompatible substances.
- Do not store in direct sunlight
- Store in a dry area under nitrogen blanket (refrigerated ~4°C)

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8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

- Wash thoroughly after handling.
- Wear appropriate protective clothing. NIOSH/MSHA approved respirator, chemical resistant gloves/safety goggles.
- In case of contact use safety showers and eye bath for washing.
- Keep adequate exhaust ventilation
9. PHYSICOCHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYSICAL STATE</td>
<td>Clear liquid</td>
</tr>
<tr>
<td>APPEARANCE</td>
<td>Yellow</td>
</tr>
<tr>
<td>ODOR</td>
<td>Pungent &amp; irritating</td>
</tr>
<tr>
<td>BOILING POINT</td>
<td>95-97 °C at 15 mmHg</td>
</tr>
<tr>
<td>MELTING POINT</td>
<td>7 °C</td>
</tr>
<tr>
<td>FLASH POINT</td>
<td>60 °C</td>
</tr>
<tr>
<td>SPECIFIC GRAVITY/DENSITY</td>
<td>1.135</td>
</tr>
<tr>
<td>SOLUBILITY IN WATER</td>
<td>Soluble</td>
</tr>
<tr>
<td>pH (10% solution in water)</td>
<td>5.5-6.5</td>
</tr>
<tr>
<td>LEL</td>
<td>2 (vol %)</td>
</tr>
<tr>
<td>UEL</td>
<td>10 (vol %)</td>
</tr>
<tr>
<td>COMBUSTIBLE LIQUID</td>
<td>Yes</td>
</tr>
<tr>
<td>FLAMMABLE MATERIAL</td>
<td>Yes</td>
</tr>
<tr>
<td>PYROPHORIC MATERIAL</td>
<td>No</td>
</tr>
<tr>
<td>EXPLOSIVE MATERIAL</td>
<td>No</td>
</tr>
<tr>
<td>MOLECULAR WEIGHT</td>
<td>107.11</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

- Chemical Stability: Stable under normal temperature and pressure.
- Conditions to avoid: Ignition sources, air, light, incompatible materials.
- Incompatibilities with other materials: Strong oxidising agents, strong reducing agents, strong acids, strong bases

11. TOXICOLOGICAL INFORMATION

- **Acute effects:**
  Harmful if swallowed, inhaled, or absorbed through skin. Causes irritation. Causes irritation to mucous membrane.

- **Toxicity:**
  ORAL RAT LD50: 2207 mg/kg

- **Carcinogenicity:**
  Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

  RTECS#: QS2980000

12. ECOLOGICAL INFORMATION

- Do not allow to enter water, waste water or soil.

13. DISPOSAL CONSIDERATION

- Burn in a chemical incinerator equipped with an afterburner & scrubber.
- Observe all federal, state and local environmental regulations.
14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>PROPER SHIPPING NAME</th>
<th>Flammable liquid n.o.s</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN/ID NUMBER</td>
<td>1993</td>
</tr>
<tr>
<td>UN HAZARD CLASS</td>
<td>3</td>
</tr>
<tr>
<td>UN PACKING GROUP</td>
<td>III</td>
</tr>
</tbody>
</table>

15. REGULATORY INFORMATION

**European information**
- **EC NO:** 207-900-4
- R-10 (Flammable)
- 36/37/38 (Irritating to eyes, respiratory system & skin)
- R-41 (Risk of serious damage to eyes)
- R-42/43 (May cause sensitisation by inhalation and skin contact)
- S 16-(Keep away from sources of ignition - No smoking)
- S 23-(Do not inhale gas/fumes/vapours/spray)
- S-26 (In case of contact with eyes, rinse immediately with plenty of water & seek medical advice)
- S-36 (Wear suitable protective clothing)

**US information**
- Is listed in EPA TSCA chemical inventory.
- None of the chemical in this product is listed under TSCA section 12b
- None of the chemical has an RQ under SARA Section 302
- None of the chemical has a TPQ under SARA Section 302
- None of the chemical is reported under SARA Section 313
- This chemical doesn’t contain any class1 & class2 ozone depletors, but listed as hazardous air pollutants under ‘Clean Air Act’
- This chemical is listed as Hazardous substances or priority pollutants or Toxic substances list under ‘Clean Water Act’

16. OTHER INFORMATION

Information contained in this MSDS is believed to be correct but no representation, guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. This MSDS shall be used as guide only. JUBILANT ORGANOSYS LIMITED makes no warranties expressed or implied of the adequacy of this document for any particular purpose.

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