Safety Data Sheet

Section 1: Chemical Identification

Chemical Name: 8-ethyl-5-oxo-2-piperazin-1-ylpyrido[2,3-d]pyrimidine-6-carboxylic acid
Alternative Name: Pipemidic acid, Deblaston, piperamic acid, Pipram, Palin
Catalog Number: P-720-10; P-720-100
Recommended use: Pipemidic acid is a broad spectrum pyrimidinone antibiotic that covers a wide range of gram positive and gram negative bacteria. It is intended for research purposes only.
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Section 2: Hazardous Information

GHS Classification
Respiratory sensitization (Category 1)
Skin sensitization (Category 1)

GHS Label Elements, including Precautionary statements

DANGER!

Hazard Statements:
H317: May cause an allergic skin reaction
H334: May cause allergy or asthma symptoms
Precautionary Statements:
P261: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray
P280: Wear protective gloves/ eye protection/ face protection
P342+P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

Potential Health Effects
Eye: Causes eye irritation.
Skin: May be harmful if absorbed through skin. Causes skin irritation.
Ingestion: May be harmful if swallowed.
Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

HMIS Classification
Not available.

NFPA Rating
Not available.

Section 3: Composition/Information on Ingredients
Identity: 8-ethyl-5-oxo-2-piperazin-1-ylpyrido[2,3-d]pyrimidine-6-carboxylic acid
Synonyms: Pipemidic acid, Deblaston, piperamic acid, Pipram, Palin
CAS number: 51940-44-4
Molecular Formula: C_{14}H_{17}N_{5}O_{3}
Molecular Weight: 303.32 g/mol

Section 4: First Aid Measures
Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Skin: Wash off with soap and plenty of water. Consult a physician.

Eye: Immediately rinse out with water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Consult a physician.

Ingestion: Wash out mouth with water. Drink plenty of water. Consult a physician.

Section 5: Fire Fighting Measures
Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards arising from the chemical: During a fire, highly toxic gases may be generated by thermal decomposition or combustion – Carbon oxides, Nitrogen
oxides.

**Special protective actions for fire-fighters:** Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

**Section 6: Accidental Release Measures**

**Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions:** Do not let product enter drains.

**Methods and materials for containment and cleaning up:** Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**Section 7: Handling and Storage**

**Precautions for safe handling:** Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature: 2-8 °C.

Keep in a dry place. Product is light and moisture sensitive.

**Section 8: Exposure Controls / Personal Protection**

**Control parameters:** Contains no substances with occupational exposure limit values.

**Appropriate engineering controls:** Use only in a chemical fume hood. Safety shower and eye bath.

**Personal Protective Equipment (PPE)**

**Eye/Face Protection:** Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin Protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry
hands. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory Protection:** Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Other Protective Clothing or Equipment:** Wear appropriate protective clothing to prevent exposure.

**Section 9: Physical and Chemical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Yellowish-white crystals</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point</td>
<td>251-255 °C</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>534.9 °C</td>
</tr>
<tr>
<td>Flash Point</td>
<td>277.3 °C</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower Explosion Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Upper Explosion Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapour Pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapour Density</td>
<td>Not available</td>
</tr>
<tr>
<td>Relative Density</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Water: Slightly soluble</td>
</tr>
<tr>
<td></td>
<td>Alcohols: Slightly soluble</td>
</tr>
<tr>
<td></td>
<td>Acids and Bases: Soluble</td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>Not available</td>
</tr>
</tbody>
</table>

**n-octanol/water**

**Auto-Ignition**

| Temperature:                   | Not available              |
| Decomposition                  | Not available              |
| Temperature:                   | Not available              |
| Viscosity:                     | Not available              |

**Section 10: Stability and Reactivity Data**

**Reactivity:** Not available.

**Chemical stability:** Stable under recommended storage conditions.

**Possibility of hazardous reactions:** Not available.

**Conditions to avoid:** Light. Moisture.
**Incompatible materials:** Strong oxidizing agents.

**Hazardous decomposition products:** Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides.

**Section 11: Toxicological Information**

**Acute toxicity:**
- Oral:
  - LD$_{50}$ (Rat) = 16,000 mg/kg
  - LD$_{50}$ (Mouse) = 5,000 mg/kg
  - LD$_{50}$ (Dog) = >2,000 mg/kg
  - LD$_{50}$ (Monkey) = >2,000 mg/kg
- Intravenous:
  - LD$_{50}$ (Rat) = 529 mg/kg
  - LD$_{50}$ (Mouse) = 300 mg/kg
- Subcutaneous:
  - LD$_{50}$ (Rat) = 1,438 mg/kg
  - LD$_{50}$ (Mouse) = 1,213 mg/kg

**Skin corrosion/irritation:**
Not available.

**Respiratory or skin sensitization:**
Not available.

**Chronic effects:**
Not available.

**Germ cell mutagenicity:**
Genotoxicity in vivo – rat – Oral
DNA damage

**Carcinogenicity:**
- IARC: 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.
- ACGIH: No component 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 component 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 component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity:**
- Reproductive toxicity – rat – Oral
- Effects on Newborn: Weaning or lactation index (e.g. #alive at weaning per # alive at day 4).
- Developmental Toxicity – rat – Oral
- Specific Developmental Abnormalities: Urogenital system.
**STOT-single exposure:**
Not available.

**STOT-repeated exposure:**
Not available.

**Aspiration hazard:**
Not available.

**Likely routes of exposure:**
Respiratory organs, mouth, skin, and eyes.

**Symptoms of exposure:**
Aminoglycosides are associated with significant nephrotoxicity and/or ototoxicity. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Section 12: Ecological Information**

**Toxicity:**
Not available.

**Persistence and degradability:**
Not available.

**Bioaccumulative potential:**
Not available.

**Mobility in soil:**
Not available.

**Other adverse effects:**
Not available.

**Section 13: Disposal Considerations**
Only professional staff trained in such techniques must undertake waste disposal. Observe all appropriate federal, provincial or state and local regulations. The material for disposal should be mixed with, or dissolved in, a combustible solvent and burnt in a chemical incinerator equipped with an afterburner and scrubber.

**Section 14: Transport Information**

**US Department of Transportation (DOT)**
Not dangerous goods.

**International Maritime Dangerous Goods (IMDG)**
Not dangerous goods.
International Air Transport Association (IATA)
Not dangerous goods.

Section 15: Regulatory Information

OSHA Hazards
Not available.

SARA 302 Components:
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components:
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards:
Not available.

Massachusetts Right To Know Components:
No Components Listed

Pennsylvania Right To Know Components:
No Components Listed

New Jersey Right To Know Components:
No Components Listed

California Prop. 65 Components:
California Proposition 65: This product does not contain chemical(s) known to the state of California to cause developmental toxicity.

Section 16: Other Information

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