Prionil®

PROPIONITRILE
ALSO KNOWN AS
- Propionitrile
- Ethyl cyanide
- Propanenitrile

KEY CHARACTERISTICS
- Cost-effective intermediate
- Higher boiling point relative to acetonitrile
- High solvency - miscible in acetone, alcohol and ether
- Water soluble

Flopropione pharmaceutical
Trifluralin herbicide
Crystallization solvent purification aid
Propionate salts mold inhibitor
Prionil is a specialty nitrile, also known as propionitrile, used as a building block for many key intermediates in agricultural, industrial, personal care and other applications.

**INTERMEDIATES**

- As a herbicide and pharmaceutical intermediate, Prionil is a precursor to propylamines (nPA, DnPA, TnPA), C-3 building blocks used in the preparation of:
  - Trifluralin (herbicide)
  - Flopropione (pharmaceutical)
- Oxazoline intermediate
  As an oxazoline intermediate, Prionil can be used as an epoxy curing agent, in pharmaceuticals (Tagamet), in adhesives, herbicides and specialty acrylics

**SOLVENTS**

- Crystallization solvent
  Used in the production of fragrances, flavorings, amines and pharmaceuticals such as ketoprofen
- Acetonitrile replacement
- Electronic cleaners

**CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assay, wt.%</td>
<td>98 minimum</td>
</tr>
<tr>
<td>Color, APHA</td>
<td>40 maximum</td>
</tr>
<tr>
<td>Water, wt.%</td>
<td>0.5 maximum</td>
</tr>
<tr>
<td>Other nitriles, wt.%</td>
<td>3.5 maximum</td>
</tr>
</tbody>
</table>

**PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical formula</td>
<td>C₃H₅N</td>
</tr>
<tr>
<td>Molar mass</td>
<td>55.08 g·mol⁻¹</td>
</tr>
<tr>
<td>Appearance</td>
<td>Colorless liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Sweetish pleasant</td>
</tr>
<tr>
<td>Density</td>
<td>772 mg mL⁻¹</td>
</tr>
<tr>
<td>Melting point</td>
<td>–100 to –86°C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>96 to 98°C</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>11.9% (20°C)</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>270 μmol Pa⁻¹ kg⁻¹</td>
</tr>
<tr>
<td>Refractive index (nD)</td>
<td>1.366</td>
</tr>
<tr>
<td>Flash point</td>
<td>Flash point 6°C (43°F)</td>
</tr>
</tbody>
</table>
About Ascend

Ascend Performance Materials is a global leader in the production of high-quality plastics, chemicals, and fibers. As the world’s largest fully integrated manufacturer of nylon 6,6 resin, our manufacturing processes are vertically integrated, ensuring the highest level of quality and economies of scale. Ascend’s specialty chemicals and blends of acids, amines and esters are used in a variety of applications and industries. We offer customized solutions through formulated products and superior technical support.

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