Kalama® and Purox®
High Purity, Nature Identical Ingredients for Food & Beverage

Emerald is the leading global producer of key preservatives and flavors for the food industry. By producing ingredients to the highest industry standards for purity and quality, Emerald helps protect your brand equity and the integrity of your products.

Emerald’s operations in U.S. and Europe are backward integrated, strategically located near major ports and rail lines, and certified under FSSC 22000, ISO 9001, and ISO 14001. In addition to compliance with REACH and relevant food safety regulations and standards (such as FSMA, GFSI, and c-GMP), our food-grade portfolio meets FCC specifications and is also certified kosher and halal.

Kalama® Flavor Ingredients

Our portfolio and flavor and fragrance ingredients deliver a desirable, mouthwatering appeal to a wide range of applications. Notes include nature identical citrus, almond, and cinnamates, which are central to many applications such as bakery goods, beverages, confectionary, and more.

Purox and Kalama® Benzoate Preservatives

Benzoic acid and its salts are highly effective preservatives to inhibit the growth of yeasts, bacteria, and molds in acidic food and beverage applications. Emerald’s Purox benzoates are produced to the highest purity available, minimum 99.9%, which ensures excellent taste and odor profiles. Purox® S Sodium Benzoate’s unique, dust-free particle size offers very good dissolution and flow, making it an excellent choice for applications where solubility is a concern.

Other Benzoate Ingredients

Kalama® Benzyl Alcohol NF/FCC and Kalama® Benzyl Benzoate are used as fixatives in confectionary applications.
### Key Applications

**Production Location(s)**

<table>
<thead>
<tr>
<th>Flavor/Preservative/Other Ingredient</th>
<th>Americas</th>
<th>United Kingdom</th>
<th>Europe, Middle East, Africa</th>
<th>Asia Pacific</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kalama® C-6 Aldehyde FCC</td>
<td>$K$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kalama® C-8 Aldehyde FCC</td>
<td>$K$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kalama® C-10 Aldehyde FCC</td>
<td>$K$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kalama® 3-Phenyl Propanol FCC</td>
<td>$K$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kalama® Cinnamic Alcohol FCC</td>
<td>$K$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kalama® Cinnamic Aldehyde FCC</td>
<td>$K$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kalama® Benzaldehyde FCC</td>
<td>$K,R$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kalama® Methyl Benzoate FCC</td>
<td>$K$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purox® B Food/Pharma Benzoic Acid</td>
<td>$R$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purox® S Sodium Benzoate</td>
<td>$R$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kalama® Sodium Benzoate</td>
<td>$K$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kalama® Potassium Benzoate</td>
<td>$K$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kalama® Benzyl Alcohol NF/FCC</td>
<td>$K$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kalama® Benzyl Benzoate USP/FCC</td>
<td>$K$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Applications**

- **Beverage**
- **Foods**
- **Other Applications**

**Notes**

- **K**: Produced in Kalama, WA, USA
- **R**: Produced in Rotterdam, Netherlands

---

**Contact Information**

**Americas**

Vancouver, Washington, USA  
+1 800-223-0035 or +1 360-954-7100  
kalama@emeraldmaterials.com

**United Kingdom**

Widnes, United Kingdom  
+44 151-423-8100  
kalama.uk@emeraldmaterials.com

**Europe, Middle East, Africa**

Geleen, The Netherlands  
+31 88-888-0500  
purox.info@emeraldmaterials.com

**Asia Pacific**

Hong Kong  
+852 2598-7990

www.kalama.emeraldmaterials.com  
July 2018