**TECHNICAL DATA SHEET**

**Product:** ETIBOR-48 (Granular and Powder)

**Synonyms:** Di-sodium Tetraborate Pentahydrate; Buffer Salt pH 9.18; Borax Pentahydrate; Sodium Borate Pentahydrate, 5 mol Borax

**CAS#** 12179-04-3

**Formula:** Na$_2$B$_4$O$_7$.5H$_2$O

**Product Description:** Etibor-48 is a white, odorless crystalline granular or powder product. Etibor-48 is the most common form of sodium borate used in industry. It is mildly alkaline. The most tangible advantage of using Etibor-48 is, besides having comparable physico-chemical aspects as that of Borax Decahydrate, Etibor-48 has relatively higher Boron content per unit mass compared to Borax Decahydrate. Etibor-48 is also less hygroscopic. It is mildly alkaline in solution.

**Packaging:** Etibor-48 is available in 25 kg (55 lb.) multilayer paper bags, 1000 kg (2200 lb.) bulk bags and bulk loose powders.

**Applications:**
- Fluxing agent
- Water Softener and Buffering Agent
- Soaps and Detergent formulations
- Agriculture
- Pesticide formulations
- Corrosion Inhibition
- Glass and Ceramics
- Fiberglass Insulations
- Lubricant
- Antifreeze
- Adhesives
- Flame retardant

**Precautions:** Etibor-48 is chemically stable, however, it is advised to store Etibor-48 under dry, cool and steady temperature conditions. During storage and transport avoid any wide variation in temperature. With temperature cycling and exposure to humid environment, Etibor-48 may undergo inter-particle bridging or caking, which may impair material flow.
## Typical properties of Etibor-48:

<table>
<thead>
<tr>
<th>Property</th>
<th>Typical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Granular Powder</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>55-65 lb/ft³</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.88</td>
</tr>
<tr>
<td>Solubility in water at 25°C, 50°C and 100°C</td>
<td>4.4%, 13.7% and 50% respectively</td>
</tr>
<tr>
<td>Solubility in propylene glycol at 25°C</td>
<td>21.5%</td>
</tr>
<tr>
<td>pH of saturated aqueous solution at 20°C</td>
<td>9.2</td>
</tr>
</tbody>
</table>

### Chemical Analysis

<table>
<thead>
<tr>
<th>Component</th>
<th>Unit</th>
<th>Specification Granular (min-max)</th>
<th>Typical Value Granular</th>
<th>Specification Powder (min-max)</th>
<th>Typical Value Powder</th>
</tr>
</thead>
<tbody>
<tr>
<td>B₂O₃</td>
<td>%</td>
<td>48.0–49.35%</td>
<td>49</td>
<td>47.8 – 49.0 %</td>
<td>48</td>
</tr>
<tr>
<td>SO₄</td>
<td>ppm</td>
<td>135 max.</td>
<td>108</td>
<td>200 max.</td>
<td>120</td>
</tr>
<tr>
<td>Fe</td>
<td>ppm</td>
<td>3 max.</td>
<td>2</td>
<td>3 max.</td>
<td>2</td>
</tr>
<tr>
<td>Cl</td>
<td>ppm</td>
<td>70 max.</td>
<td>50</td>
<td>70 max.</td>
<td>55</td>
</tr>
<tr>
<td>Water Insoluble</td>
<td>ppm</td>
<td>150 max.</td>
<td>115</td>
<td>150 max.</td>
<td>125</td>
</tr>
<tr>
<td>Purity</td>
<td>%</td>
<td>99.90 min.</td>
<td>100</td>
<td>99.90 min.</td>
<td>100</td>
</tr>
</tbody>
</table>

### Dry Sieve Analysis

<table>
<thead>
<tr>
<th>Size</th>
<th>US Mesh</th>
<th>Unit</th>
<th>Specification Granular</th>
<th>Typical Value Granular</th>
<th>Specification Powder</th>
<th>Typical Value Powder</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 1.680 mm</td>
<td>12</td>
<td>%</td>
<td>-</td>
<td>0.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>+ 1.180 mm</td>
<td>16</td>
<td>%</td>
<td>4.0 max.</td>
<td>2.0</td>
<td>2.0 max.</td>
<td>0.1</td>
</tr>
<tr>
<td>+ 0.85 mm</td>
<td>20</td>
<td>%</td>
<td>-</td>
<td>8.0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>+ 0.60 mm</td>
<td>30</td>
<td>%</td>
<td>-</td>
<td>18.0</td>
<td>-</td>
<td>2.0</td>
</tr>
<tr>
<td>+ 0.15 mm</td>
<td>100</td>
<td>%</td>
<td>-</td>
<td>60.0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>+ 0.075 mm</td>
<td>200</td>
<td>%</td>
<td>-</td>
<td>9.0</td>
<td>-</td>
<td>84.0</td>
</tr>
<tr>
<td>- 0.075 mm</td>
<td>200</td>
<td>%</td>
<td>5.0 max</td>
<td>3.0</td>
<td>50.0 max.</td>
<td>14.0</td>
</tr>
</tbody>
</table>

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