TPX™ food containers with excellent heat resistance, antifouling properties and transparency

TPX™ has good releasability, comparable to fluorine resins. It prevents the stains, colors and smells of food from remaining in a food container. Further, it has excellent heat resistance and can withstand cooking oily food in a microwave oven.

Superior Characteristics of TPX™ Food Containers

- **Heat Resistance**: TPX™ has a high melting point of 220°C to 240°C and is difficult to melt even when heated in a microwave oven for a long period of time compared to other materials.
- **Antifouling Properties**: TPX™ features excellent releasability with low surface tension of 24 mN/m. It is highly resistant to stains, colors and smells, allowing products to maintain cleanliness.
- **Light Plastic**: TPX™ is the lightest material (0.83 g/cm³) among general plastics and helps to reduce product weight.
- **Safety**: TPX™ is a BPA-free material and has obtained certification for food packaging materials in each country.
- **Transparency**: TPX™ boasts transparency equivalent to glass and acrylic. (Haze <5%)  

Case Studies

TPX™ is widely used in kitchen utensils in addition to food containers.

- Rice Paddle
- Cutting Board
- Popcorn Maker

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Related Tests

1. Coloring Resistance Test

**Test Conditions**

1. After putting meat sauce in a TPX™ container and a PP container, heat both. (5 cycles at 750 W for 1 minute)
2. After heating, wash the containers and measure the coloring property (b value).

**Test Result**

Compared to PP (polypropylene), a resin for general food containers, TPX™ shows good coloring resistance.

2. Heat Resistance Test

<table>
<thead>
<tr>
<th>Heat Resistance Comparison</th>
<th>Melting Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPX™</td>
<td>220°C~240°C</td>
</tr>
<tr>
<td>PVDC</td>
<td>140°C</td>
</tr>
<tr>
<td>PE</td>
<td>110°C</td>
</tr>
</tbody>
</table>

**TPX™ can withstand oily mayonnaise.**

[Plastic Wrap A] After heating for 20 seconds: The wrap tore and the mayonnaise fell into the container.

[For wrap] After heating for 120 seconds: The mayonnaise melted but the wrap did not tear.

Note: With the cooperation of RIKEN FABRO CORPORATION. For wrap (http://goods.jrcs.co.jp)

Recommended Grades

<table>
<thead>
<tr>
<th>Properties</th>
<th>Test Method (Unit)</th>
<th>RT18 RT18XB</th>
<th>RT31 RT31XB</th>
<th>DX820</th>
<th>MX004</th>
<th>MX0020</th>
<th>MBZ230 (Opaque Grade)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFR</td>
<td>Mitsui Chemicals Method(g/10min)</td>
<td>26</td>
<td>21</td>
<td>180</td>
<td>25</td>
<td>21</td>
<td>57</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Mitsui Chemicals Method(°C)</td>
<td>232</td>
<td>232</td>
<td>232</td>
<td>228</td>
<td>224</td>
<td>233</td>
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<tr>
<td>Rockwell Hardness</td>
<td>ISO2039</td>
<td>80</td>
<td>78</td>
<td>94</td>
<td>59</td>
<td>38</td>
<td>73</td>
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<tr>
<td>Izod Impact Strength</td>
<td>ISO180 (J/m²)</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>14</td>
<td>NB</td>
<td>30</td>
</tr>
</tbody>
</table>

- XB Types are Blue Tint Grade.
- TPX™ can be used in a variety of forming methods, such as injection, extrusion and coating. Please contact us for details.