**Ultrafuse® PC/ABS FR**

Easy to print flame retardant filament

Ultrafuse® PC/ABS FR is a V-0 flame retardant blend of Polycarbonate and Acrylonitrile Butadiene Styrene, two of the most used thermoplastics for engineering & electrical applications. The combination of these two materials results in a premium material with a mix of the excellent mechanical properties of PC and the comparably low printing temperature of ABS. Combined with a halogen free flame retardant, parts printed with Ultrafuse® PC/ABS FR feature great tensile and impact strength, higher thermal resistance than ABS and can fulfill the requirements of the UL94 V-0 standard.

**Benefits at a Glance**
- Fulfills flame retardancy according to UL 94 V-0 (for 1.5 & 3.0 mm thickness)
- Outstanding aesthetics
- Strong layer adhesion
- High print speeds possible

**Example Applications**
Applications which require flame retardancy like
- Housing for Raspberry pi
- Sockets and plugs
- Housing for handheld devices or powertools
- Automotive components

**Material Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability according to UL94</td>
<td>VO @ 1.5 mm and 3.0 mm thickness</td>
</tr>
<tr>
<td>Glow wire test (GWEPT)</td>
<td>725 °C 1.5 mm thickness</td>
</tr>
<tr>
<td></td>
<td>960 °C 3.0 mm thickness</td>
</tr>
<tr>
<td>HDT at 1.8 MPa</td>
<td>79 °C</td>
</tr>
<tr>
<td>HDT at 0.45 MPa</td>
<td>86 °C</td>
</tr>
<tr>
<td>Flexural Strength</td>
<td>27.4 (ZX), 90.6 (XZ), 88.1 (XY) MPa</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>17.3 (ZX), 50.1 (XY)</td>
</tr>
<tr>
<td>Impact Strength Izod</td>
<td>(unnotched) 3.0 (ZX), 87.9 (XZ), 57.0 (XY) kJ/m²</td>
</tr>
<tr>
<td>Elongation at break</td>
<td>0.8 (ZX), 10.7 (XY)%</td>
</tr>
</tbody>
</table>

**Printing Profiles**

<table>
<thead>
<tr>
<th>Ultrafuse® PC/ABS FR</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nozzle Temperature</td>
<td>230-280 °C</td>
</tr>
<tr>
<td>Nozzle Diameter</td>
<td>≥ 0.4 mm</td>
</tr>
<tr>
<td>Bed Temperature</td>
<td>80-100 °C</td>
</tr>
<tr>
<td>Bed Modification</td>
<td>Glass plate + adhesive</td>
</tr>
<tr>
<td>Print Speed</td>
<td>30-90 mm/s</td>
</tr>
<tr>
<td>Build Chamber Temperature</td>
<td>Passively heated, closed chamber</td>
</tr>
</tbody>
</table>

**Drying Recommendations**
The filament is delivered in a printable condition. To achieve best print results, please dry the filament at 60°C for at least 4 hours (vacuum oven preferred over a hot air dryer) and keep the filament dry in for instance a dry box.

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