Aquathene FR420000

W&C Polyolefin Compound

Product Description
Aquathene FR420000 is a colorable flame retardant catalyst masterbatch selected by customers for use in moisture cure applications. FR420000 also contains antioxidants, metal deactivator and stabilizers for sunlight resistance. When FR420000 is melt blended with Aquathene AQ120000 in a 52%/48% ratio, respectively, and crosslinked after exposure to moisture, this formulation is typically used in low voltage power and control cable applications where UL44 and CSA 22.2 (No. 38 and No. 52) specify VW-1 and FT-4 flame rating with 90°C service in wet locations.

Regulatory Status
For regulatory compliance information, see Aquathene FR420000 Product Stewardship Bulletin (PSB) and Safety Data Sheet (SDS).

Status
Commercial: Active

Availability
North America

Application
Wire & Cable

Market
Wire & Cable

Processing Method
Wire & Cable

<table>
<thead>
<tr>
<th>Typical Properties</th>
<th>Nominal Value</th>
<th>Units</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melt Flow Rate, (190 °C/2.16 kg)</td>
<td>1.4</td>
<td>g/10 min</td>
<td>ASTM D1238</td>
</tr>
<tr>
<td>Density, (23 °C)</td>
<td>2.01</td>
<td>g/cm³</td>
<td></td>
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<td></td>
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</tbody>
</table>
**Notes**

These are typical property values not to be construed as specification limits.

**Processing Techniques**

Users should determine the conditions necessary to obtain optimum product properties and suitability of the product for the intended application.

The total system crosslinks after the materials are mixed during extrusion and subsequently exposed to moisture. Crosslinking can be achieved by exposure to steam, immersion in water or storage at ambient conditions. Since cure time varies considerable with environmental conditions and cable constructions, contact your LyondellBasell sales or technical service representative for detailed cure conditions.

Specific recommendations for resin type and processing conditions can only be made when the end use, required properties and fabrication equipment are known.

**General Extrusion Conditions**

*Aquathene* FR420000, like other thermoplastic polyolefin compounds, can be extruded using a conventional extruder. Below are suggested extrusion conditions for *Aquathene* FR420000. These conditions are intended as general guidelines only, and are not optimum values, since manufacturing variables such as extruder type and size have an effect on processing of thermoplastic compounds.

A suggested temperature profile for use with a 2.5", 24:1 extruder equipped with a Maddock mixing screw follows:

<table>
<thead>
<tr>
<th>Extruder Zone</th>
<th>Temperature Range</th>
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<th>Temperature Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed</td>
<td>275 - 280 °F (135 - 138 °C)</td>
<td>Zone 5</td>
<td>325 - 335 °F (163 - 168 °C)</td>
</tr>
<tr>
<td>Zone 2</td>
<td>290 - 295 °F (143 - 146 °C)</td>
<td>Flange / Adapter</td>
<td>325 - 335 °F (163 - 168 °C)</td>
</tr>
<tr>
<td>Zone 3</td>
<td>310 - 315 °F (154 - 157 °C)</td>
<td>Throat / Die</td>
<td>335 - 345 °F (168 - 174 °C)</td>
</tr>
<tr>
<td>Zone 4</td>
<td>310 - 315 °F (154 - 157 °C)</td>
<td>Wire Preheat</td>
<td>215 - 225 °F (102 - 107 °C)</td>
</tr>
</tbody>
</table>

**Material Handling**

*Aquathene* FR420000 is supplied in moisture barrier liners. *Aquathene* FR420000 can absorb moisture when exposed to the environment; therefore, it should be dried prior to use.

**Company Information**

For further information regarding the LyondellBasell company, please visit [http://www.lyb.com/](http://www.lyb.com/).

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