Flexible AR Compounds

**Fluon+™ Flexible AR** are melt-processable compounds based on modified ethylene/tetrafluoroethylene (ETFE) copolymer and a fluoroelastomer. Fluon+ AR grades maintain many of the desirable properties of ETFE, but in a form that is much more flexible (see Fig. 1). These materials can be used in many applications including wire and cable (automotive, industrial, aerospace, transit, and appliance markets); films and sheets; tubing and pipe; and electronic components.

The heat resistance of flexible AR compounds can be enhanced by radiation curing and are cross-linkable without the presence of curing agents or coagents. Color can be customized by incorporating our Fluon+ ETFE C-88AXM color concentrates.

### Common Products

<table>
<thead>
<tr>
<th>Products</th>
<th>AR-8018TD</th>
<th>AR-3300N</th>
<th>AR-3300P</th>
<th>AR-3300BK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Higher melt point</td>
<td>Flexible processing window</td>
<td>V-0 flammability rated</td>
<td>Pre-pigmented black</td>
</tr>
</tbody>
</table>

### Typical Physical Properties Measured

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Method</th>
<th>Units</th>
<th>AR-3300N Typical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melt Flow Rate</td>
<td>ASTM D-3159</td>
<td>g/10 minutes</td>
<td>9</td>
</tr>
<tr>
<td>Melting Point</td>
<td>AGC Internal</td>
<td>°C</td>
<td>225</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>ASTM D-638</td>
<td>MPa</td>
<td>10</td>
</tr>
<tr>
<td>Tensile Elongation</td>
<td>ASTM D-628</td>
<td>%</td>
<td>440</td>
</tr>
<tr>
<td>Flex Modulus</td>
<td>ASTM D-790</td>
<td>MPa</td>
<td>140</td>
</tr>
</tbody>
</table>

### Typical Applications

- Wire and cable
- Films and sheets
- Tubing and pipe
- Electrical components

### Processing Techniques

- Extrusion
- Injection molding
- Compression molding
- Electron-Beam (EB) irradiation or gamma-ray irradiation cross-linking (optional)
Flexibility
Fluon+ AR grades maintain many of the desirable properties of ETFE, but in a form that is much more flexible (see Fig. 1).

![Graph showing Flexural Modulus comparison](image)

**Figure 1.** Flexibility as measured by Flexural Modulus of AR-3300N compared to various fluoropolymer materials.

Heat Aging
The heat resistance of Fluon+ Flexible AR grades can be improved by radiation curing. The product is cross-linkable without the presence of curing agents or co-agents. The recommended dosage is 1-10 Mrads of electron-beam or gamma-ray radiation. Figure 2 shows the effect of cross-linking on AR-3300N and how the compound retains strength at elevated temperatures.

![Graph showing Tensile Strength Retention](image)

**Figure 2.** Tensile strength retention of AR-3300N (cross-linked and un-cross-linked) at 200 °C.

Contact your AGC Chemicals commercial representative for more information on specific grades or for technical datasheets.

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AGC Chemicals Americas, Inc.
55 E. Uwchlan Avenue, Suite 201
Exton, PA 19341
United States of America

Telephone: +1 610-423-4300
Toll Free (US only): 800-424-7833
Fax: +1 610-423-4305

www.agcchem.com
Visit our website for compliance information and industry certifications.

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