DuPont™ HPC AD1022 is an advanced zinc ionomer with good melt processibility, excellent toughness, low hardness and low stiffness. The resin can be used alone or in combination with other grades of DuPont™ HPC to provide varying degrees of flexibility, softness and toughness. The resin or blends thereof can be processed by typical melt processing equipment including injection molding, blow molding, compression molding, or other processes.

For golf ball covers, it provides a softer feel, imparts greater spin control and enhances resistance to damage from shear, scuff or other damage from the club face.

Material Status
- Developmental: Active

Features
- Zinc ionomer

Characteristics / Benefits
- Shore Hardness (D Scale) = 37
- Flex Modulus (Kpsi) = 4.5
- ATTI Compression = 26
- Coefficient of Restitution (at 125 ft/sec) = 0.500

Applications
- Golf Ball covers, Footwear, other industrial and consumer goods applications

**Typical Properties**

**Physical**
- Density (g/cm³) = 0.954
- Melt Flow Rate (190°C/2.16kg) = 4.5 g/10 min

**Thermal**
- Melting Point (DSC) = 77°C (171°F)

**Nominal Values**

<table>
<thead>
<tr>
<th>Property</th>
<th>Nominal Value</th>
<th>Test Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>0.954 g/cm³</td>
<td>ASTM D792, ISO 1183</td>
</tr>
<tr>
<td>Melt Flow Rate</td>
<td>4.5 g/10 min</td>
<td>ASTM D1238, ISO 1133</td>
</tr>
<tr>
<td>Melting Point</td>
<td>77°C (171°F)</td>
<td>ASTM D3418, ISO 3146</td>
</tr>
</tbody>
</table>

**Processing Information**

General
- Maximum Processing Temperature = 285°C (545°F)

General Processing Information
- DuPont™ HPC AD1022 is normally processed at melt temperatures ranging from 160°-235°C (320°-455°F). Actual processing temperatures will usually be determined by either the specific equipment or other polymers in a blend or coextrusion.

Materials of construction used in the processing of this resin preferably should be corrosion resistant. Stainless steels of the types 316, 15-5PH, and 17-4PH are excellent, as is quality chrome or nickel plating, and in particular duplex chrome plating. Type 410 stainless steel is satisfactory, but needs to be tempered at a minimum temperature of 600°C (1112°F) to avoid hydrogen-assisted stress corrosion cracking. Alloy steels such as 4140 are borderline in performance.
Carbon steels are not satisfactory. While stainless steels can provide adequate corrosion protection, in some cases severe purging difficulties have been encountered. Nickel plating has been satisfactory, but experiments have shown that chrome surfaces have the least adhesion to acid based polymers. In recent years, the quality of chrome plating has been deteriorating due to environmental pressures, and the corrosion protection has not always been adequate. Chrome over top of stainless steel seems to provide the best combination for corrosion protection and ease of purging.

After processing DuPont™ HPC AD1022, purge the material out using a polyethylene resin, preferably with a lower melt flow rate than the DuPont™ HPC resin in use. The "Disco Purge Method" is suggested as the preferred purging method, as this method usually results in a more effective purging process. Information on the Disco Purge Method can be obtained via your DuPont Sales Representative.

Never shut down the extrusion system with DuPont™ HPC resin in the extruder and die. Properly purge out the DuPont™ HPC with a polyethylene, and shut down the line with polyethylene or polypropylene in the system.

### Regulatory Information
For information on regulatory compliance outside of the U.S., consult your local DuPont representative.

### Safety & Handling
DuPont™ HPC resins as supplied by DuPont are not considered hazardous materials. As with any hot material, care should be taken to protect the hands and other exposed parts of the body when handling molten polymer. At recommended processing temperatures, small amounts of fumes may evolve from the resins. When resins are overheated, more extensive decomposition may occur. Adequate ventilation should be provided to remove fumes from the work area. Disposal of scrap presents no special problems and can be by landfill or incineration in a properly operated incinerator. Disposal should comply with local, state, and federal regulations. Resin pellets can be a slipping hazard. Loose pellets should be swept up promptly to prevent falls. For more detailed information on the safe handling and disposal of DuPont resins, a Material Safety Data Sheet can be obtained from the DuPont Packaging and Industrial Polymers website or by contacting your sales representative.

Read and Understand the Material Safety Data Sheet (MSDS) before using this product.

### Regional Centres
DuPont operates in more than 70 countries. For help finding a local representative, please contact one of the following regional customer contact centers:

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fluids or tissues unless the material has been provided from DuPont under a written contract that is consistent with DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative. You may also request a copy of DuPont POLICY Regarding Medical Applications H-50103-3 and DuPont CAUTION Regarding Medical Applications H-50102-3.

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