



DuPont™ HPC AD 1022

DuPont™ HPC resins Product Data Sheet

Description

Product Description

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.

Restrictions

Material Status

- Developmental: Active

Typical Characteristics

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

Nominal Values

Test Method (s)

* Density ()

0.954 g/cm³

ASTM D792

ISO 1183

* Melt Flow Rate (190°C/2.16kg)

4.5 g/10 min

ASTM D1238

ISO 1133

Thermal

Nominal Values

Test Method (s)

* Melting Point (DSC)

77°C (171°F)

ASTM D3418

ISO 3146

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:

Americas

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Fax +1-302-355-4056

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The data listed here fall within the normal range of properties, but they should not be used to establish specification limits nor used alone

CAUTION: Do not use DuPont materials in medical applications involving implantations in the human body or contact with internal body

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