



DuPont™ Surlyn® 8140

Description

Product Description

DuPont™ Surlyn® 8140 thermoplastic resin is an advanced ethylene/methacrylic acid (E/MAA) copolymer, in which the MAA acid groups have been partially neutralized with sodium ions. The amount of MAA and neutralization levels for this grade are optimized to deliver higher hardness and stiffness compared with other sodium ionomer grades of Surlyn®. The resin is ideal where high stiffness, high clarity and good abrasion resistance are desired. In golf ball covers, the resin provides good cut resistance, impact durability, high resilience and increased coefficient of restitution, particularly when used in blends with other cations. The resin is normally injection molded.

Product Characteristics

| | |
|-------------------------|--|
| Processing Method | • Injection Molding |
| Material Status | • Commercial: Active |
| Availability | • Globally |
| Cation Type | • Na |
| Uses | • Sporting Goods |
| Manufacturer / Supplier | • DuPont Packaging & Industrial Polymers |

Properties

Physical

| | Nominal Values | Test Method |
|--------------------------------------|-----------------------|-----------------------|
| Density | 0.96g/cm ³ | ASTM D792 – ISO 1183 |
| Melt Flow Rate (Condition E, 2.16kg) | 2.6g/10 min | ASTM D1238 – ISO 1133 |

Thermal

| | Nominal Values | Test Method |
|--------------------------------|--------------------|-----------------------|
| Brittle Temperature | not yet determined | ASTM D746 |
| Melting Point (DSC) | 189°F (87°C) | ASTM D3418 – ISO 3146 |
| Vicat Softening Point (Rate B) | 136°F (58°C) | ASTM D1525 – ISO 306 |
| Freezing Point (DSC) | 113°F (45°C) | ASTM D3418 |

Mechanical

| | Nominal Values | Test Method |
|--------------------------|--------------------|-------------|
| Abrasion Resistance | 426NBS Index | ASTM D1630 |
| Flexural Modulus (73 °F) | 517MPa (74985psi) | ASTM D790 |
| Flexural Modulus (-4 °F) | not yet determined | ASTM D790 |
| | not yet determined | ASTM D1052 |

Ross Flex (compression molded, 3.2 mm thick, pierced 2.5 mm wide, 73 °F)

| | | |
|--|--------------------|-----------------------|
| Ross Flex (-20 °F) | not yet determined | ASTM D1052 |
| Tensile Elongation @ Break (73 °F) | 325% | ASTM D638 – ISO 527-2 |
| Tensile Strength @ Break (73° F) | 36.5MPa (5294psi) | ASTM D638 – ISO 527-2 |
| Tensile Strength @ Yield (Type IV bars, compression molded, 5.0 cm/min, 73 °F) | 20MPa (2901psi) | ASTM D638 |

Impact**Nominal Values****Test Method**

| | | |
|---------------------------------|--------------------------|------------|
| Notched Izod Impact (73 °F) | not yet determined | ASTM D256 |
| Tensile Impact Strength (73 °F) | 606ft-lb/in ² | ASTM D1822 |
| Tensile Impact Strength (73 °F) | 606ft-lb/in ² | ASTM D1822 |

Hardness**Nominal Values****Test Method**

| | | |
|------------------------------|----|----------------------|
| Durometer Hardness (Shore D) | 65 | ASTM D2240 – ISO 868 |
|------------------------------|----|----------------------|

Optical**Nominal Values****Test Method**

| | | |
|-----------------|------|------------|
| Haze (0.250 in) | 1.7% | ASTM D1003 |
|-----------------|------|------------|

Elastomer**Nominal Values****Test Method**

| | | |
|-----------------------|--------------------|-----------|
| Tear Strength (73 °F) | not yet determined | ASTM D624 |
|-----------------------|--------------------|-----------|

Processing Information

FDA Status

Surlyn[®] industrial resins are available that comply with US FDA 21 CFR 177.1330. For more information contact your DuPont sales office.

Safety & Handling

Surlyn[®] 8140 as supplied by DuPont is not considered a hazardous material. 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 the 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 Product Safety Bulletin and OSHA Material Safety Data Sheet can be obtained from the DuPont Packaging Products sales office serving you.

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

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