

Hytrel® 6356

THERMOPLASTIC POLYESTER ELASTOMER

DuPont Performance Polymers

PROSPECTOR®

www.ulprospector.com

Technical Data

Product Description

63 Shore D High Performance Polyester Elastomer

General

| | |
|-------------------------------|---|
| Material Status | • Commercial: Active |
| Literature ¹ | • Processing - Extrusion (English) • Processing - Injection Molding (English) • Typical Processing for DuPont Engineering Polymers (English) |
| UL Yellow Card ² | • E83247-251139 • E41938-234583 |
| Search for UL Yellow Card | • DuPont Performance Polymers • Hytrel® |
| Availability | • Africa & Middle East • Asia Pacific • Europe • Latin America • North America |
| Additive | • UV Stabilizer |
| Features | • UV Stabilized |
| RoHS Compliance | • Contact Manufacturer |
| Forms | • Pellets |
| Processing Method | • Casting • Extrusion • Film Extrusion • Injection Molding • Profile Extrusion • Sheet Extrusion • Thermoforming |
| Multi-Point Data | • Creep Modulus vs. Time (ISO 11403-1) • Isochronous Stress vs. Strain (ISO 11403-1) • Isothermal Stress vs. Strain (ISO 11403-1) • Isothermal Stress vs. Strain (TPE) (ISO 11403-1) • Secant Modulus vs. Strain (ISO 11403-1) • Shear Stress vs. Shear Rate (ISO 11403-1) • Specific Volume vs Temperature (ISO 11403-2) • Tensile Modulus vs. Temperature, Dynamic (ISO 11403-1) • Viscosity vs. Shear Rate (ISO 11403-2) |
| Part Marking Code (ISO 11469) | • TPC-ET |
| Resin ID (ISO 1043) | • TPC-ET |

| Physical | Nominal Value Unit | Test Method |
|---|-----------------------------|-------------|
| Density | 1.22 g/cm ³ | ISO 1183 |
| Melt Mass-Flow Rate (MFR) (230°C/2.16 kg) | 9.0 g/10 min | ISO 1133 |
| Melt Volume-Flow Rate (MVR) (230°C/2.16 kg) | 8.50 cm ³ /10min | ISO 1133 |
| Molding Shrinkage | | ISO 294-4 |
| Across Flow | 1.5 % | |
| Flow | 1.5 % | |
| Water Absorption | | ISO 62 |
| 23°C, 24 hr | 0.50 % | |
| Saturation, 23°C, 2.00 mm | 0.60 % | |
| Equilibrium, 23°C, 2.00 mm, 50% RH | 0.20 % | |
| Mechanical | Nominal Value Unit | Test Method |
| Tensile Modulus | 280 MPa | ISO 527-2 |
| Tensile Stress | | ISO 527-2 |
| Yield | 20.0 MPa | |
| Break | 43.0 MPa | |
| 5.0% Strain | 12.0 MPa | |
| 10% Strain | 15.0 MPa | |
| 50% Strain | 18.8 MPa | |
| 100% Strain | 19.0 MPa | |



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| Mechanical | Nominal Value Unit | Test Method |
|---|---------------------------|-------------|
| Tensile Strain | | ISO 527-2 |
| Yield | 31 % | |
| Break | > 300 % | |
| Nominal Tensile Strain at Break | 500 % | ISO 527-2 |
| Tensile Creep Modulus | | ISO 899-1 |
| 1 hr | 248 MPa | |
| 1000 hr | 182 MPa | |
| Flexural Modulus | 290 MPa | ISO 178 |
| Abrasion Resistance | 110 mm ³ | ISO 4649 |
| Elastomers | Nominal Value Unit | Test Method |
| Tear Strength | | ISO 34-1 |
| Across Flow | 150 kN/m | |
| Flow | 160 kN/m | |
| Impact | Nominal Value Unit | Test Method |
| Charpy Notched Impact Strength | | ISO 179/1eA |
| -40°C | 15 kJ/m ² | |
| -30°C | 25 kJ/m ² | |
| 23°C, Partial Break | 120 kJ/m ² | |
| Notched Izod Impact Strength | | ISO 180/1A |
| -40°C | 19 kJ/m ² | |
| 23°C | 81 kJ/m ² | |
| Tensile Impact Strength (23°C) | 300 kJ/m ² | ISO 8256/1 |
| Hardness | Nominal Value Unit | Test Method |
| Shore Hardness | | ISO 7619 |
| Shore D | 63 | |
| Shore D, 15 sec | 57 | |
| Thermal | Nominal Value Unit | Test Method |
| Heat Deflection Temperature | | |
| 0.45 MPa, Unannealed | 80.0 °C | ISO 75-2/B |
| 1.8 MPa, Unannealed | 45.0 °C | ISO 75-2/A |
| Brittleness Temperature | -96.0 °C | ISO 974 |
| Glass Transition Temperature ⁴ | 0.00 °C | ISO 11357-2 |
| Vicat Softening Temperature | | |
| -- | 195 °C | ISO 306/A50 |
| -- | 100 °C | ISO 306/B50 |
| Melting Temperature ⁴ | 210 °C | ISO 11357-3 |
| CLTE | | |
| Flow : 23 to 55°C | 1.9E-4 cm/cm/°C | ASTM E831 |
| Flow | 1.9E-4 cm/cm/°C | ISO 11359-2 |
| Flow : -40 to 23°C | 1.6E-4 cm/cm/°C | ISO 11359-2 |
| Transverse : 23 to 55°C | 1.7E-4 cm/cm/°C | ASTM E831 |
| Transverse | 1.8E-4 cm/cm/°C | ISO 11359-2 |
| Transverse : -40 to 23°C | 1.5E-4 cm/cm/°C | ISO 11359-2 |
| Effective Thermal Diffusivity | 5.44E-8 m ² /s | |
| Electrical | Nominal Value Unit | Test Method |
| Surface Resistivity | > 1.0E+15 ohms | IEC 60093 |
| Volume Resistivity | 8.0E+13 ohms·cm | IEC 60093 |
| Electric Strength | 20 kV/mm | IEC 60243-1 |
| Relative Permittivity | | IEC 60250 |
| 100 Hz | 4.60 | |
| 1 MHz | 4.10 | |



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| Electrical | Nominal Value Unit | Test Method |
|-------------------------------------|------------------------|----------------------|
| Dissipation Factor | | IEC 60250 |
| 100 Hz | 0.012 | |
| 1 MHz | 0.036 | |
| Flammability | Nominal Value Unit | Test Method |
| Flame Rating | | UL 94 |
| 1.5 mm | HB | IEC 60695-11-10, -20 |
| 3.0 mm | HB | |
| Oxygen Index | 21 % | ISO 4589-2 |
| FMVSS Flammability | SE | FMVSS 302 |
| Fogging - G-value (condensate) | 1.0E-4 g | ISO 6452 |
| Fill Analysis | Nominal Value Unit | |
| Melt Density | 1.06 g/cm ³ | |
| Specific Heat Capacity of Melt | 2150 J/kg/°C | |
| Thermal Conductivity of Melt | 0.15 W/m/K | |
| Additional Information | Nominal Value Unit | Test Method |
| Emission of Organic Compounds | 2.50 µgC/g | VDA 277 |
| Odor | 2.50 | VDA 270 |
| Injection | Nominal Value Unit | |
| Drying Temperature | 100 °C | |
| Drying Time - Desiccant Dryer | 2.0 to 3.0 hr | |
| Suggested Max Moisture | 0.080 % | |
| Processing (Melt) Temp | 235 to 260 °C | |
| Melt Temperature, Optimum | 240 °C | |
| Mold Temperature | 45 to 55 °C | |
| Mold Temperature, Optimum | 45 °C | |
| Holding Pressure | 70.0 MPa | |
| Drying Recommended | yes | |
| Extrusion | Nominal Value Unit | |
| Drying Temperature | 90 to 110 °C | |
| Drying Time | 2.0 to 3.0 hr | |
| Suggested Max Moisture | 0.060 % | |
| Melt Temperature | 225 to 240 °C | |
| Extrusion Melt Temperature, Optimum | 230 °C | |

Notes

¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

² A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

³ Typical properties: these are not to be construed as specifications.

⁴ 10°C/min



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Where to Buy

Supplier

DuPont Performance Polymers

Wilmington, DE USA

Telephone: 302-999-4592

Web: <http://plastics.dupont.com/>

Distributor

Biesterfeld Plastic GmbH

Biesterfeld Plastic GmbH is a Pan European distribution company. Contact Biesterfeld Plastic GmbH for availability of individual products by country.

Telephone: +49-40-32008-0

Web: <http://www.biesterfeld-plastic.com/>

Availability: Algeria, Austria, Belgium, Bosnia and Herzegovina, Brazil, Bulgaria, Croatia, Cyprus, Czech Republic, Egypt, France, Germany, Greece, Hungary, Italy, Libyan Arab Jamahiriya, Luxembourg, Mauritania, Morocco, Netherlands, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Switzerland, Tunisia, Turkey

CCC Plastics

Telephone: 800-465-6917

Web: <http://www.cccplastics.com/>

Availability: Canada

Distrupol Ltd

Distrupol Ltd is a Pan European distribution company. Contact Distrupol Ltd for availability of individual products by country.

Telephone: 08452003040

Web: <http://www.distrupol.com/>

Availability: Denmark, Finland, Ireland, Norway, Sweden, United Kingdom

PolyOne Distribution

PolyOne Distribution is a global distribution company. Contact PolyOne Distribution for availability of individual products by country.

Telephone: 800-894-4266

Web: <http://polyonedistribution.com/>

Availability: Global

