

DuPont Performance Polymers Delrin® 100AF Acetal Homopolymer (Unverified Data**)

Category : Polymer , Thermoplastic , Acetal (POM) , Acetal Homopolymer, PTFE-Filled

Material Notes:

Delrin® 100AF is a high viscosity acetal homopolymer containing 20% Teflon® PTFE fibers. It is designed for applications requiring low wear and/or low friction against steel, itself, and other plastics. Information provided by DuPont Performance Polymers

Order this product through the following link:

http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Delrin-100AF-Acetal-Homopolymer-nbspUnverified-Data.php

| Physical Properties | Metric | English | Comments |
|---------------------|--------------------------------------|--------------------------------------|------------|
| Specific Gravity | 1.53 g/cc | 1.53 g/cc | ASTM D792 |
| Density | 1.54 g/cc | 0.0556 lb/in ³ | ISO 1183 |
| Melt Flow | 0.50 g/10 min | 0.50 g/10 min | ASTM D1238 |
| | @Load 1.05 kg, Temperature 190 °C | @Load 2.31 lb, Temperature 374 °F | |

| Mechanical Properties | Metric | English | Comments |
|---------------------------|----------------------|----------------------|--------------------------------|
| Tensile Strength at Break | 53.0 MPa | 7690 psi | ISO 527 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Tensile Strength | 53.0 MPa | 7690 psi | 5mm/min (0.2in/min); ASTM D638 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Tensile Strength, Yield | 53.0 MPa | 7690 psi | ISO 527 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Elongation at Break | 15 % | 15 % | ISO 527 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| | 19 % | 19 % | 5mm/min (0.2in/min); ASTM D638 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Elongation at Yield | 15 % | 15 % | ISO 527 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Tensile Modulus | 2.70 GPa | 392 ksi | ISO 527 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| | 2.75 GPa | 399 ksi | 5mm/min (0.2in/min); ASTM D638 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |

| Mechanical Properties | 2.50 GPa ^a Metric | 363 ksi ^a English | Comments |
|----------------------------|---------------------------------|---------------------------------|-------------|
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| | 2.51 GPa | 364 ksi | ASTM D790 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Izod Impact, Notched | 0.500 J/cm | 0.937 ft-lb/in | ASTM D256 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Izod Impact, Notched (ISO) | 5.00 kJ/m ² | 2.38 ft-lb/in ² | ISO 180/1A |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Charpy Impact Unnotched | 7.00 J/cm ² | 33.3 ft-lb/in ² | ISO 179/1eU |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Charpy Impact, Notched | 0.500 J/cm ² | 2.38 ft-lb/in ² | ISO 179/1eA |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |

| Thermal Properties | Metric | English | Comments |
|---------------------------------|------------------------------|------------------------------|----------------|
| CTE, linear, Parallel to Flow | 500 µm/m-°C | 278 µin/in-°F | ASTM E 831 |
| | @Temperature 23.0 - 55.0 °C | @Temperature 73.4 - 131 °F | |
| | 500 µm/m-°C | 278 µin/in-°F | ISO 11359-1/-2 |
| | @Temperature -40.0 - 23.0 °C | @Temperature -40.0 - 73.4 °F | |
| | 500 µm/m-°C | 278 µin/in-°F | ISO 11359-1/-2 |
| | @Temperature 23.0 - 55.0 °C | @Temperature 73.4 - 131 °F | |
| | 500 µm/m-°C | 278 µin/in-°F | ISO 11359-1/-2 |
| | @Temperature 55.0 - 100 °C | @Temperature 131 - 212 °F | |
| CTE, linear, Transverse to Flow | 100 µm/m-°C | 55.6 µin/in-°F | ISO 11359-1/-2 |
| | @Temperature -40.0 - 23.0 °C | @Temperature -40.0 - 73.4 °F | |
| | 110 µm/m-°C | 61.1 µin/in-°F | ASTM E 831 |
| | @Temperature 23.0 - 55.0 °C | @Temperature 73.4 - 131 °F | |
| | 110 µm/m-°C | 61.1 µin/in-°F | ISO 11359-1/-2 |
| | @Temperature 23.0 - 55.0 °C | @Temperature 73.4 - 131 °F | |

| Thermal Properties | 130 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Metric | 72.2 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ English | Comments ISO 11359-1/-2 |
|---|---|---|----------------------------|
| | @Temperature 55.0 - 100 °C | @Temperature 131 - 212 °F | |
| Melting Point | 178 °C | 352 °F | 10°C/min; ISO 11357-1/-3 |
| | 178 °C | 352 °F | ASTM D3418 |
| Deflection Temperature at 1.8 MPa (264 psi) | 87.0 °C | 189 °F | ISO 75-1/-2 |
| UL RTI, Electrical | 105 °C @Thickness 3.00 mm | 221 °F @Thickness 0.118 in | UL 746B |
| | 105 °C @Thickness 1.50 mm | 221 °F @Thickness 0.0591 in | UL 746B |
| UL RTI, Mechanical with Impact | 85.0 °C @Thickness 1.50 mm | 185 °F @Thickness 0.0591 in | UL 746B |
| | 85.0 °C @Thickness 3.00 mm | 185 °F @Thickness 0.118 in | UL 746B |
| UL RTI, Mechanical without Impact | 90.0 °C @Thickness 1.50 mm | 194 °F @Thickness 0.0591 in | UL 746B |
| | 90.0 °C @Thickness 3.00 mm | 194 °F @Thickness 0.118 in | UL 746B |
| Flammability, UL94 | HB @Thickness 1.50 mm | HB @Thickness 0.0591 in | IEC 60695-11-10 |
| | HB @Thickness 3.00 mm | HB @Thickness 0.118 in | IEC 60695-11-10 |
| | HB @Thickness 1.50 mm | HB @Thickness 0.0591 in | UL94 |
| | HB @Thickness 3.00 mm | HB @Thickness 0.118 in | UL94 |

| Electrical Properties | Metric | English | Comments |
|----------------------------|---|--|----------|
| Comparative Tracking Index | 600 V @Thickness 3.00 mm, Temperature 23.0 °C | 600 V @Thickness 0.118 in, Temperature 73.4 °F | UL 746A |

| Processing Properties | Metric | English | Comments |
|-----------------------|------------------|------------------|----------------------------|
| Melt Temperature | 215 °C | 419 °F | Optimum; Injection Molding |
| | 210 - 220 °C | 410 - 428 °F | Injection Molding |
| Mold Temperature | 90.0 °C | 194 °F | optimum; Injection Molding |
| | 80.0 - 100 °C | 176 - 212 °F | Injection Molding |
| Drying Temperature | 80.0 °C | 176 °F | Injection Molding |
| Dry Time | 2.00 - 4.00 hour | 2.00 - 4.00 hour | Injection Molding |
| Moisture Content | <= 0.20 % | <= 0.20 % | Injection Molding |

| Descriptive Properties | Value | Comments |
|---------------------------|--|-----------|
| Additive | Lubricant, PTFE, 20% | |
| Appearance | Brown Color | |
| Drying Recommended | Not normally required unless moisture content of resin exceeds recommended level | |
| Features | Friction, Low | |
| | Viscosity, High | |
| | Wear Resistance, Good | |
| Forms | Pellets | |
| Generic | Acetal (POM) Homopolymer | |
| Material Status | Current | |
| Part Marking Code | >POM-SF20< | ISO 11469 |
| Polymer Family | POM | |
| Polymer Type | POM Homopolymer | |
| Processing Method | Extrusion | |
| | Injection Molding | |
| Product Category | Extrusion Resins | |
| | Low Wear and Friction Resins | |
| Region Available - Global | Yes | |
| Resin Identification | POM-SF20 | ISO 1043 |

| Descriptive Properties | Contact Manufacturer Value | Comments |
|------------------------|----------------------------|----------|
| Uses | Bushings | |
| | Parts, Engineering | |

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