

DuPont Performance Polymers Delrin® 500AF Acetal (POM) (Unverified Data**)

Category : Polymer , Thermoplastic , Acetal (POM) , Acetal Homopolymer, Unreinforced

Material Notes:

20% Teflon® Fiber Filled Medium Viscosity Acetal Homopolymer with Low Wear and Low Friction Delrin 500AF is a medium viscosity acetal homopolymer resin containing 20% Teflon PTFE fibers. It is designed for applications requiring low wear and/or low coefficient of friction provided by DuPont Performance Polymers

Order this product through the following link:

http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Delrin-500AF-Acetal-POM-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Density	1.53 g/cc	0.0553 lb/in ³	ISO 1183
Water Absorption	1.0 % @Thickness 2.00 mm	1.0 % @Thickness 0.0787 in	Sim. to ISO 62
Moisture Absorption	0.200 % @Thickness 2.00 mm	0.200 % @Thickness 0.0787 in	Sim. to ISO 62
Viscosity	100000 cP @Shear Rate 5000 1/s, Temperature 230 °C	100000 cP @Shear Rate 5000 1/s, Temperature 446 °F	ISO 11403-1 -2
	107000 cP @Shear Rate 5000 1/s, Temperature 215 °C	107000 cP @Shear Rate 5000 1/s, Temperature 419 °F	ISO 11403-1 -2
	116000 cP @Shear Rate 5000 1/s, Temperature 200 °C	116000 cP @Shear Rate 5000 1/s, Temperature 392 °F	ISO 11403-1 -2
	374000 cP @Shear Rate 500 1/s, Temperature 230 °C	374000 cP @Shear Rate 500 1/s, Temperature 446 °F	ISO 11403-1 -2
	425000 cP @Shear Rate 500 1/s, Temperature 215 °C	425000 cP @Shear Rate 500 1/s, Temperature 419 °F	ISO 11403-1 -2
	483000 cP @Shear Rate 500 1/s, Temperature 200 °C	483000 cP @Shear Rate 500 1/s, Temperature 392 °F	ISO 11403-1 -2
Linear Mold Shrinkage, Flow	0.020 cm/cm	0.020 in/in	ISO 294-4 2577
Linear Mold Shrinkage, Transverse	0.014 cm/cm	0.014 in/in	ISO 294-4 2577

Physical Properties	Metric	English	Comments
Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	50.0 MPa	7250 psi	ISO 527-1/-2
Tensile Stress	8.70 MPa	1260 psi	ISO 11403-1 -2
	@Strain 0.900 %, Temperature 90.0 °C	@Strain 0.900 %, Temperature 194 °F	
	21.5 MPa	3120 psi	ISO 11403-1 -2
	@Strain 3.60 %, Temperature 90.0 °C	@Strain 3.60 %, Temperature 194 °F	
	23.9 MPa	3470 psi	ISO 11403-1 -2
	@Strain 6.20 %, Temperature 90.0 °C	@Strain 6.20 %, Temperature 194 °F	
	24.3 MPa	3520 psi	ISO 11403-1 -2
	@Strain 8.90 %, Temperature 90.0 °C	@Strain 8.90 %, Temperature 194 °F	
	27.2 MPa	3950 psi	ISO 11403-1 -2
	@Strain 1.40 %, Temperature 40.0 °C	@Strain 1.40 %, Temperature 104 °F	
	30.5 MPa	4420 psi	ISO 11403-1 -2
	@Strain 1.00 %, Temperature 0.000 °C	@Strain 1.00 %, Temperature 32.0 °F	
	31.6 MPa	4580 psi	ISO 11403-1 -2
	@Strain 1.20 %, Temperature 23.0 °C	@Strain 1.20 %, Temperature 73.4 °F	
	32.0 MPa	4640 psi	ISO 11403-1 -2
	@Strain 0.900 %, Temperature -20.0 °C	@Strain 0.900 %, Temperature -4.00 °F	
	40.5 MPa	5870 psi	ISO 11403-1 -2
	@Strain 5.40 %, Temperature 40.0 °C	@Strain 5.40 %, Temperature 104 °F	
	42.2 MPa	6120 psi	ISO 11403-1 -2
	@Strain 9.40 %, Temperature 40.0 °C	@Strain 9.40 %, Temperature 104 °F	
	42.6 MPa	6180 psi	ISO 11403-1 -2
	@Strain 13.4 %, Temperature 40.0 °C	@Strain 13.4 %, Temperature 104 °F	
	45.6 MPa	6610 psi	ISO 11403-1 -2

Mechanical Properties	Metric @Strain 5.00 %, Temperature 23.0 °C	English @Strain 5.00 %, Temperature 73.4 °F	Comments
	47.3 MPa	6860 psi	
	@Strain 8.70 %, Temperature 23.0 °C	@Strain 8.70 %, Temperature 73.4 °F	ISO 11403-1 -2
	47.8 MPa	6930 psi	
	@Strain 12.4 %, Temperature 23.0 °C	@Strain 12.4 %, Temperature 73.4 °F	ISO 11403-1 -2
	50.2 MPa	7280 psi	
	@Strain 3.80 %, Temperature 0.000 °C	@Strain 3.80 %, Temperature 32.0 °F	ISO 11403-1 -2
	53.7 MPa	7790 psi	
	@Strain 6.60 %, Temperature 0.000 °C	@Strain 6.60 %, Temperature 32.0 °F	ISO 11403-1 -2
	54.4 MPa	7890 psi	
	@Strain 9.50 %, Temperature 0.000 °C	@Strain 9.50 %, Temperature 32.0 °F	ISO 11403-1 -2
	54.9 MPa	7960 psi	
	@Strain 3.70 %, Temperature -20.0 °C	@Strain 3.70 %, Temperature -4.00 °F	ISO 11403-1 -2
	58.2 MPa	8440 psi	
	@Strain 6.50 %, Temperature -20.0 °C	@Strain 6.50 %, Temperature -4.00 °F	ISO 11403-1 -2
	59.2 MPa	8590 psi	
	@Strain 9.30 %, Temperature -20.0 °C	@Strain 9.30 %, Temperature -4.00 °F	ISO 11403-1 -2
Elongation at Break	10 %	10 %	ISO 527-1/-2
Tensile Modulus	2.80 GPa	406 ksi	ISO 527-1/-2
Flexural Modulus	2.50 GPa	363 ksi	ISO 178
Shear Modulus	0.141 GPa	20.5 ksi	
	@Temperature 150 °C	@Temperature 302 °F	Dynamic; ISO 11403-1 -2
	0.306 GPa	44.4 ksi	
	@Temperature 110 °C	@Temperature 230 °F	Dynamic; ISO 11403-1 -2
	0.628 GPa	91.1 ksi	
	@Temperature 60.0 °C	@Temperature 140 °F	Dynamic; ISO 11403-1 -2
	0.961 GPa	139 ksi	

Mechanical Properties	Metric @ Temperature 10.0 °C	English @ Temperature 50.0 °F	Dynamic; ISO 11403-1 -2 Comments
	1.12 GPa	162 ksi	Dynamic; ISO 11403-1 -2
	@Temperature -20.0 °C	@Temperature -4.00 °F	
	1.284 GPa	186.2 ksi	Dynamic; ISO 11403-1 -2
	@Temperature -50.0 °C	@Temperature -58.0 °F	
Secant Modulus	0.396 GPa	57.5 ksi	ISO 11403-1 -2
	@Strain 10.7 %, Temperature 40.0 °C	@Strain 10.7 %, Temperature 104 °F	
	0.481 GPa	69.7 ksi	ISO 11403-1 -2
	@Strain 9.90 %, Temperature 23.0 °C	@Strain 9.90 %, Temperature 73.4 °F	
	0.709 GPa	103 ksi	ISO 11403-1 -2
	@Strain 7.60 %, Temperature 0.000 °C	@Strain 7.60 %, Temperature 32.0 °F	
	0.750 GPa	109 ksi	ISO 11403-1 -2
	@Strain 5.40 %, Temperature 40.0 °C	@Strain 5.40 %, Temperature 104 °F	
	0.793 GPa	115 ksi	ISO 11403-1 -2
	@Strain 7.40 %, Temperature -20.0 °C	@Strain 7.40 %, Temperature -4.00 °F	
	0.912 GPa	132 ksi	ISO 11403-1 -2
	@Strain 5.00 %, Temperature 23.0 °C	@Strain 5.00 %, Temperature 73.4 °F	
	1.32 GPa	192 ksi	ISO 11403-1 -2
	@Strain 3.80 %, Temperature 0.000 °C	@Strain 3.80 %, Temperature 32.0 °F	
	1.48 GPa	215 ksi	ISO 11403-1 -2
	@Strain 3.70 %, Temperature -20.0 °C	@Strain 3.70 %, Temperature -4.00 °F	
	1.94 GPa	282 ksi	ISO 11403-1 -2
	@Strain 1.40 %, Temperature 40.0 °C	@Strain 1.40 %, Temperature 104 °F	
	2.63 GPa	382 ksi	ISO 11403-1 -2
	@Strain 1.20 %, Temperature 23.0 °C	@Strain 1.20 %, Temperature 73.4 °F	
	3.05 GPa	442 ksi	ISO 11403-1 -2

Mechanical Properties	Metric @Strain 1.00 %, Temperature 0.000 °C	English @Strain 1.00 %, Temperature 32.0 °F	Comments
	3.56 GPa	516 ksi	
	@Strain 0.900 %, Temperature -20.0 °C	@Strain 0.900 %, Temperature -4.00 °F	ISO 11403-1 -2
Izod Impact, Notched (ISO)	3.00 kJ/m ²	1.43 ft-lb/in ²	ISO 180/1A
Charpy Impact Unnotched	4.00 J/cm ²	19.0 ft-lb/in ²	ISO 179/1eU
	3.50 J/cm ²	16.7 ft-lb/in ²	
	@Temperature -30.0 °C	@Temperature -22.0 °F	ISO 179/1eU
Charpy Impact, Notched	0.300 J/cm ²	1.43 ft-lb/in ²	ISO 179/1eA
	0.300 J/cm ²	1.43 ft-lb/in ²	
	@Temperature -30.0 °C	@Temperature -22.0 °F	ISO 179/1eA

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	110 µm/m-°C	61.1 µin/in-°F	ISO 11359-1/-2
CTE, linear, Transverse to Flow	100 µm/m-°C	55.6 µin/in-°F	ISO 11359-1/-2
Melting Point	178 °C	352 °F	10°C/min; ISO 11357-1/-3
Deflection Temperature at 0.46 MPa (66 psi)	160 °C	320 °F	ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	92.0 °C	198 °F	ISO 75-1/-2

Electrical Properties	Metric	English	Comments
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	IEC 60093
Comparative Tracking Index	600 V	600 V	IEC 60112

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