

DuPont Performance Polymers Delrin® 100ST NC010 Acetal (POM) (Unverified Data**)

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

Material Notes:

Super Toughened High Viscosity Acetal Homopolymer Delrin 100ST NC010 is a super tough high viscosity acetal homopolymer grade with superior impact resistance. It is designed for highly stressed parts where outstanding toughness is essential. Information provided by DuPont Performance Polymers

Order this product through the following link:

http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Delrin-100ST-NC010-Acetal-POM-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Density	1.34 g/cc	0.0484 lb/in ³	ISO 1183
Water Absorption	0.90 % @Thickness 2.00 mm	0.90 % @Thickness 0.0787 in	Sim. to ISO 62
Moisture Absorption	0.350 % @Thickness 2.00 mm	0.350 % @Thickness 0.0787 in	Sim. to ISO 62
Viscosity	148000 cP @Shear Rate 5000 1/s, Temperature 220 °C	148000 cP @Shear Rate 5000 1/s, Temperature 428 °F	ISO 11403-1 -2
	171000 cP @Shear Rate 5000 1/s, Temperature 205 °C	171000 cP @Shear Rate 5000 1/s, Temperature 401 °F	ISO 11403-1 -2
	201000 cP @Shear Rate 5000 1/s, Temperature 190 °C	201000 cP @Shear Rate 5000 1/s, Temperature 374 °F	ISO 11403-1 -2
	688000 cP @Shear Rate 500 1/s, Temperature 220 °C	688000 cP @Shear Rate 500 1/s, Temperature 428 °F	ISO 11403-1 -2
	856000 cP @Shear Rate 500 1/s, Temperature 205 °C	856000 cP @Shear Rate 500 1/s, Temperature 401 °F	ISO 11403-1 -2
	1.058e+6 cP @Shear Rate 500 1/s, Temperature 190 °C	1.058e+6 cP @Shear Rate 500 1/s, Temperature 374 °F	ISO 11403-1 -2
Linear Mold Shrinkage, Flow	0.013 cm/cm	0.013 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
Melt Flow	@Load 2.16 kg, Temperature 190 °C	@Load 4.76 lb, Temperature 374 °F	cm ³ /10min; ISO 1133
	2.0 g/10 min	2.0 g/10 min	ISO 1133
	@Load 2.16 kg, Temperature 190 °C	@Load 4.76 lb, Temperature 374 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	58	58	ISO 2039-2
Hardness, Rockwell R	105	105	ISO 2039-2
Tensile Stress	6.10 MPa	885 psi	ISO 11403-1 -2
	@Strain 2.00 %, Temperature 90.0 °C	@Strain 2.00 %, Temperature 194 °F	
	14.3 MPa	2070 psi	ISO 11403-1 -2
	@Strain 7.90 %, Temperature 90.0 °C	@Strain 7.90 %, Temperature 194 °F	
	15.5 MPa	2250 psi	ISO 11403-1 -2
	@Strain 2.00 %, Temperature 40.0 °C	@Strain 2.00 %, Temperature 104 °F	
	16.9 MPa	2450 psi	ISO 11403-1 -2
	@Strain 13.9 %, Temperature 90.0 °C	@Strain 13.9 %, Temperature 194 °F	
	17.6 MPa	2550 psi	ISO 11403-1 -2
	@Strain 19.8 %, Temperature 90.0 °C	@Strain 19.8 %, Temperature 194 °F	
	18.3 MPa	2650 psi	ISO 11403-1 -2
	@Strain 2.10 %, Temperature 23.0 °C	@Strain 2.10 %, Temperature 73.4 °F	
	27.5 MPa	3990 psi	ISO 11403-1 -2
	@Strain 3.00 %, Temperature 0.000 °C	@Strain 3.00 %, Temperature 32.0 °F	
	29.8 MPa	4320 psi	ISO 11403-1 -2
	@Strain 7.80 %, Temperature 40.0 °C	@Strain 7.80 %, Temperature 104 °F	
	33.5 MPa	4860 psi	ISO 11403-1 -2
	@Strain 13.7 %, Temperature 40.0 °C	@Strain 13.7 %, Temperature 104 °F	

Mechanical Properties	Metric	English	Comments
	34.5 MPa @Strain 19.5 %, Temperature 40.0 °C	5030 psi @Strain 19.5 %, Temperature 104 °F	ISO 11403-1 -2
	34.7 MPa @Strain 3.70 %, Temperature -20.0 °C	5030 psi @Strain 3.70 %, Temperature -4.00 °F	ISO 11403-1 -2
	35.0 MPa @Strain 8.50 %, Temperature 23.0 °C	5080 psi @Strain 8.50 %, Temperature 73.4 °F	ISO 11403-1 -2
	39.2 MPa @Strain 14.8 %, Temperature 23.0 °C	5690 psi @Strain 14.8 %, Temperature 73.4 °F	ISO 11403-1 -2
	40.3 MPa @Strain 21.2 %, Temperature 23.0 °C	5850 psi @Strain 21.2 %, Temperature 73.4 °F	ISO 11403-1 -2
	44.9 MPa @Strain 12.1 %, Temperature 0.000 °C	6510 psi @Strain 12.1 %, Temperature 32.0 °F	ISO 11403-1 -2
	47.5 MPa @Strain 21.2 %, Temperature 0.000 °C	6890 psi @Strain 21.2 %, Temperature 32.0 °F	ISO 11403-1 -2
	48.3 MPa @Strain 30.3 %, Temperature 0.000 °C	7010 psi @Strain 30.3 %, Temperature 32.0 °F	ISO 11403-1 -2
	51.6 MPa @Strain 14.8 %, Temperature -20.0 °C	7480 psi @Strain 14.8 %, Temperature -4.00 °F	ISO 11403-1 -2
	54.9 MPa @Strain 25.9 %, Temperature -20.0 °C	7960 psi @Strain 25.9 %, Temperature -4.00 °F	ISO 11403-1 -2
	56.0 MPa @Strain 34.5 %, Temperature -20.0 °C	8120 psi @Strain 34.5 %, Temperature -4.00 °F	ISO 11403-1 -2
Tensile Strength, Yield	41.0 MPa	5950 psi	ISO 527-1/-2
Elongation at Break	>= 50 %	>= 50 %	Nominal; ISO 527-1/-2
Elongation at Yield	30 %	30 %	ISO 527-1/-2
Tensile Modulus	1.40 GPa	203 ksi	ISO 527-1/-2

Mechanical Properties	Metric	English	Comments
	0.383 GPa	55.2 ksi	Dynamic; ISO 11403-1 -2
	@Temperature 110 °C	@Temperature 230 °F	
	1.3427 GPa	194.74 ksi	Dynamic; ISO 11403-1 -2
	@Temperature 30.0 °C	@Temperature 86.0 °F	
	2.03 GPa	294 ksi	Dynamic; ISO 11403-1 -2
	@Temperature -20.0 °C	@Temperature -4.00 °F	
	5.48 GPa	794 ksi	Dynamic; ISO 11403-1 -2
	@Temperature -70.0 °C	@Temperature -94.0 °F	
	8.17 GPa	1180 ksi	Dynamic; ISO 11403-1 -2
	@Temperature -100 °C	@Temperature -148 °F	
Flexural Strength	34.0 MPa	4930 psi	ISO 178
	@Strain 3.50 %	@Strain 3.50 %	
Flexural Modulus	1.10 GPa	160 ksi	ISO 178
Shear Modulus	0.0911 GPa	13.2 ksi	Dynamic; ISO 11403-1 -2
	@Temperature 120 °C	@Temperature 248 °F	
	0.2153 GPa	31.23 ksi	Dynamic; ISO 11403-1 -2
	@Temperature 70.0 °C	@Temperature 158 °F	
	0.4067 GPa	58.99 ksi	Dynamic; ISO 11403-1 -2
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	0.6135 GPa	88.98 ksi	Dynamic; ISO 11403-1 -2
	@Temperature -20.0 °C	@Temperature -4.00 °F	
	1.1443 GPa	165.97 ksi	Dynamic; ISO 11403-1 -2
	@Temperature -50.0 °C	@Temperature -58.0 °F	
Secant Modulus	0.187 GPa	27.1 ksi	ISO 11403-1 -2
	@Strain 29.6 %, Temperature -20.0 °C	@Strain 29.6 %, Temperature -4.00 °F	
	0.198 GPa	28.6 ksi	ISO 11403-1 -2
	@Strain 24.2 %, Temperature 0.000 °C	@Strain 24.2 %, Temperature 32.0 °F	
	0.21859 GPa	31.704 ksi	ISO 11403-1 -2
	@Strain 15.6 %, Temperature 40.0 °C	@Strain 15.6 %, Temperature 104 °F	

Mechanical Properties	0.234 GPa Metric	34.0 ksi English	Comments
	@Strain 17.0 %, Temperature 23.0 °C	@Strain 17.0 %, Temperature 73.4 °F	ISO 11403-1 -2
	0.349 GPa	50.6 ksi	
	@Strain 14.8 %, Temperature -20.0 °C	@Strain 14.8 %, Temperature -4.00 °F	ISO 11403-1 -2
	0.371 GPa	53.8 ksi	
	@Strain 12.1 %, Temperature 0.000 °C	@Strain 12.1 %, Temperature 32.0 °F	ISO 11403-1 -2
	0.382 GPa	55.4 ksi	
	@Strain 7.80 %, Temperature 40.0 °C	@Strain 7.80 %, Temperature 104 °F	ISO 11403-1 -2
	0.412 GPa	59.7 ksi	
	@Strain 8.50 %, Temperature 23.0 °C	@Strain 8.50 %, Temperature 73.4 °F	ISO 11403-1 -2
	0.775 GPa	112 ksi	
	@Strain 2.00 %, Temperature 40.0 °C	@Strain 2.00 %, Temperature 104 °F	ISO 11403-1 -2
	0.871 GPa	126 ksi	
	@Strain 2.10 %, Temperature 23.0 °C	@Strain 2.10 %, Temperature 73.4 °F	ISO 11403-1 -2
	0.917 GPa	133 ksi	
	@Strain 3.00 %, Temperature 0.000 °C	@Strain 3.00 %, Temperature 32.0 °F	ISO 11403-1 -2
	0.938 GPa	136 ksi	
	@Strain 3.70 %, Temperature -20.0 °C	@Strain 3.70 %, Temperature -4.00 °F	ISO 11403-1 -2
Izod Impact, Notched (ISO)	90.0 kJ/m ²	42.8 ft-lb/in ²	ISO 180/1A
	20.0 kJ/m ²	9.52 ft-lb/in ²	ISO 180/1A
	@Temperature -40.0 °C	@Temperature -40.0 °F	
Charpy Impact Unnotched	NB	NB	ISO 179/1eU

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