

## DuPont Performance Polymers Delrin® 511DP NC010 Acetal Homopolymer (Unverified Data\*\*)

Category : Polymer , Thermoplastic , Acetal (POM)

### Material Notes:

Delrin® 511DP is a medium viscosity acetal homopolymer with improved thermal stability and modifications for more precise molding (reduced warpage, less shrinkage, fewer voids). Information provided by DuPont Performance Polymers

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_DuPont-Performance-Polymers-Delrin-511DP-NC010-Acetal-Homopolymer-nbspUnverified-Data.php](http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Delrin-511DP-NC010-Acetal-Homopolymer-nbspUnverified-Data.php)

Physical Properties	Metric	English	Comments
Density	1.42 g/cc	0.0513 lb/in <sup>3</sup>	ISO 1183
Linear Mold Shrinkage, Flow	0.019 cm/cm @Thickness 2.00 mm	0.019 in/in @Thickness 0.0787 in	ISO 294-4
Linear Mold Shrinkage, Transverse	0.018 cm/cm @Thickness 2.00 mm	0.018 in/in @Thickness 0.0787 in	ISO 294-4
Melt Flow	14 g/10 min @Load 2.16 kg, Temperature 190 °C	14 g/10 min @Load 4.76 lb, Temperature 374 °F	ISO 1133
Melt Index of Compound	13 g/10 min @Load 2.16 kg, Temperature 190 °C	13 g/10 min @Load 4.76 lb, Temperature 374 °F	cm <sup>3</sup> /10 min; ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	73.0 MPa @Temperature 23.0 °C	10600 psi @Temperature 73.4 °F	ISO 527
Elongation at Break	25 % @Temperature 23.0 °C	25 % @Temperature 73.4 °F	nominal; ISO 527
Elongation at Yield	12 % @Temperature 23.0 °C	12 % @Temperature 73.4 °F	ISO 527
Tensile Modulus	3.40 GPa @Temperature 23.0 °C	493 ksi @Temperature 73.4 °F	ISO 527
Flexural Strength	87.0 MPa @Strain 3.50 %, Temperature 23.0 °C	12600 psi @Strain 3.50 %, Temperature 73.4 °F	ISO 178

Mechanical Properties	3.20 GPa Metric	464 ksi English	Comments
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact Unnotched	20.0 J/cm <sup>2</sup>	95.2 ft-lb/in <sup>2</sup>	ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	22.0 J/cm <sup>2</sup>	105 ft-lb/in <sup>2</sup>	ISO 179/1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	0.650 J/cm <sup>2</sup>	3.09 ft-lb/in <sup>2</sup>	ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	0.700 J/cm <sup>2</sup>	3.33 ft-lb/in <sup>2</sup>	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	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	92.0 µm/m-°C	51.1 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	ISO 11359-1/-2
	@Temperature 23.0 - 55.0 °C	@Temperature 73.4 - 131 °F	
	150 µm/m-°C	83.3 µin/in-°F	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
Deflection Temperature at 0.46 MPa (66 psi)	163 °C	325 °F	ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	107 °C	225 °F	ISO 75-1/-2

Processing Properties	Metric	English	Comments
Melt Temperature	210 - 220 °C	410 - 428 °F	Injection Molding
	215 °C	419 °F	Optimum; Injection Molding
Mold Temperature	80.0 - 100 °C	176 - 212 °F	Injection Molding
	90.0 °C	194 °F	optimum; 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
Appearance	Natural Color	
Drying Recommended	Not normally required unless moisture content of resin exceeds recommended level	
Features	Dimensional Stability, Good	
Forms	Pellets	
Generic	Acetal (POM) Homopolymer	
Material Status	Preliminary Data	
Part Marking Code	>POM<	ISO 11469
Polymer Family	POM	
Polymer Type	POM Homopolymer	
Processing Method	Extrusion	
	Injection Molding	
Product Category	Unreinforced Resins	
Region Available - Global	Yes	
Resin Identification	POM	ISO 1043
RoHS Compliance	Contact Manufacturer	
Uses	Fasteners	
	Gears	
	Parts, Engineering	

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