

# Delrin® 100P NC010

ACETAL RESIN

DuPont Performance Polymers

**PROSPECTOR®**

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## Technical Data

### Product Description

High Viscosity Acetal Homopolymer with Improved Processing

### General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Additive	• Lubricant	• Mold Release	
Features	• Good Processability	• High Viscosity	• Homopolymer
RoHS Compliance	• Contact Manufacturer		
Forms	• Pellets		
Processing Method	• Extrusion • Injection Molding	• Profile Extrusion • Sheet Extrusion	
Multi-Point Data	• Isothermal Stress vs. Strain (ISO 11403-1) • Secant Modulus vs. Strain (ISO 11403-1) • Shear Modulus vs. Temperature (ISO 11403-1) • Shear Modulus vs. Temperature, Dynamic (ISO 11403-1) • Shear Stress vs. Shear Rate (ISO 11403-1) • Specific Volume vs Temperature (ISO 11403-2) • Tensile Fatigue (Wöhler) (ISO 11403-2) • Tensile Modulus vs. Temperature (ISO 11403-1) • Viscosity vs. Shear Rate (ISO 11403-2)		
Part Marking Code (ISO 11469)	• POM		
Resin ID (ISO 1043)	• POM		

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.42 g/cm <sup>3</sup>	1.42 g/cm <sup>3</sup>	ISO 1183
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	2.5 g/10 min	2.5 g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (190°C/2.16 kg)	0.128 in <sup>3</sup> /10min	2.10 cm <sup>3</sup> /10min	ISO 1133
Molding Shrinkage			ISO 294-4
Across Flow	1.9 %	1.9 %	
Flow	2.2 %	2.2 %	
Water Absorption			ISO 62
Saturation, 73°F (23°C), 0.0787 in (2.00 mm)	1.4 %	1.4 %	
Equilibrium, 73°F (23°C), 0.0787 in (2.00 mm), 50% RH	0.30 %	0.30 %	

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus	413000 psi	2850 MPa	ISO 527-2
Tensile Stress (Yield)	10200 psi	70.0 MPa	ISO 527-2
Tensile Strain (Yield)	25 %	25 %	ISO 527-2
Nominal Tensile Strain at Break	45 %	45 %	ISO 527-2
Tensile Creep Modulus			ISO 899-1
1 hr	392000 psi	2700 MPa	
1000 hr	218000 psi	1500 MPa	
Flexural Modulus	413000 psi	2850 MPa	ISO 178
Flexural Stress (3.5% Strain)	11200 psi	77.0 MPa	ISO 178
Poisson's Ratio	0.37	0.37	ISO 527



Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F (-30°C)	6.7 ft·lb/in <sup>2</sup>	14 kJ/m <sup>2</sup>	
73°F (23°C)	7.1 ft·lb/in <sup>2</sup>	15 kJ/m <sup>2</sup>	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F (-30°C)	190 ft·lb/in <sup>2</sup>	400 kJ/m <sup>2</sup>	
73°F (23°C)	No Break	No Break	
Notched Izod Impact Strength			ISO 180/1A
-40°F (-40°C)	5.7 ft·lb/in <sup>2</sup>	12 kJ/m <sup>2</sup>	
73°F (23°C)	6.7 ft·lb/in <sup>2</sup>	14 kJ/m <sup>2</sup>	
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness			ISO 2039-2
M-Scale	88	88	
R-Scale	119	119	
Ball Indentation Hardness (H 358/30)	25100 psi	173 MPa	ISO 2039-1
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Heat Deflection Temperature			
66 psi (0.45 MPa), Unannealed	311 °F	155 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	203 °F	95.0 °C	ISO 75-2/A
264 psi (1.8 MPa), Annealed	230 °F	110 °C	ISO 75-2/A
Vicat Softening Temperature			
--	347 °F	175 °C	ISO 306/A50
--	320 °F	160 °C	ISO 306/B50
Melting Temperature <sup>2</sup>	352 °F	178 °C	ISO 11357-3
CLTE			ISO 11359-2
Flow	6.1E-5 in/in/°F	1.1E-4 cm/cm/°C	
Flow : -40 to 73°F (-40 to 23°C)	5.6E-5 in/in/°F	1.0E-4 cm/cm/°C	
Transverse	6.1E-5 in/in/°F	1.1E-4 cm/cm/°C	
Transverse : -40 to 73°F (-40 to 23°C)	5.6E-5 in/in/°F	1.0E-4 cm/cm/°C	
Annealing Temperature	320 °F	160 °C	
Annealing Time - Optional	30.0 min/mm	30.0 min/mm	
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Surface Resistivity	2.0E+13 ohms	2.0E+13 ohms	IEC 62631-3-2
Volume Resistivity	1.0E+12 ohms·m	1.0E+12 ohms·m	IEC 62631-3-1
Electric Strength	1000 V/mil	41 kV/mm	IEC 60243-1
Relative Permittivity			IEC 62631-2-1
100 Hz	3.90	3.90	
1 MHz	3.90	3.90	
Dissipation Factor			IEC 62631-2-1
100 Hz	3.5E-3	3.5E-3	
1 MHz	5.5E-3	5.5E-3	
Comparative Tracking Index	600 V	600 V	IEC 60112
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Burning Rate <sup>3</sup> (0.0394 in (1.00 mm))	2.0 in/min	50 mm/min	ISO 3795
Flame Rating			
0.031 in (0.8 mm)	HB	HB	UL 94
0.06 in (1.5 mm)	HB	HB	UL 94 IEC 60695-11-10, -20
0.03 in (0.8 mm)	HB	HB	IEC 60695-11-10, -20
FMVSS Flammability	B	B	FMVSS 302



Fill Analysis	Nominal Value (English)	Nominal Value (SI)
Melt Density	1.19 g/cm <sup>3</sup>	1.19 g/cm <sup>3</sup>
Specific Heat Capacity of Melt	0.717 Btu/lb/°F	3000 J/kg/°C
Thermal Conductivity of Melt	1.5 Btu·in/hr/ft <sup>2</sup> /°F	0.22 W/m/K

Additional Information	Nominal Value (English)	Nominal Value (SI)	Test Method
Emission	< 8.00 mg/kg	< 8.00 mg/kg	VDA 275

Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	176 °F	80 °C
Drying Time - Desiccant Dryer	2.0 to 4.0 hr	2.0 to 4.0 hr
Suggested Max Moisture	0.20 %	0.20 %
Processing (Melt) Temp	410 to 428 °F	210 to 220 °C
Melt Temperature, Optimum	419 °F	215 °C
Mold Temperature	176 to 212 °F	80 to 100 °C
Mold Temperature, Optimum	194 °F	90 °C
Holding Pressure	13100 to 16000 psi	90.0 to 110 MPa
Drying Recommended	yes	yes
Hold Pressure Time	8.00 s/mm	8.00 s/mm

Extrusion	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	167 to 185 °F	75 to 85 °C
Drying Time	2.0 to 4.0 hr	2.0 to 4.0 hr
Suggested Max Moisture	0.20 %	0.20 %
Melt Temperature	383 to 401 °F	195 to 205 °C
Extrusion Melt Temperature, Optimum	392 °F	200 °C

**Notes**

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> 10°C/min

<sup>3</sup> FMVSS 302



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## Where to Buy

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### Supplier

**DuPont Performance Polymers**  
Wilmington, DE USA  
**Telephone:** 302-999-4592  
**Web:** <http://plastics.dupont.com/>

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### 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

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### Reseller

A Reseller is not a distributor authorized by the Supplier.

**Shanghai Jingyang New Material Technology Co., Ltd**  
**Telephone:** +86-021-80394788; Mr. Zhou: +86-15821998203  
**Web:** <http://www.basfppsu.com/>  
**Availability:** Asia Pacific, China

