

# Delrin® 500AL NC010

## ACETAL RESIN

### Product Description

Delrin® 500AL is a medium viscosity acetal homopolymer, with an advanced system of lubrication for applications requiring low wear and/or coefficient of friction against steel, itself or other plastics.

### General

Material Status	• Preliminary Data <sup>1</sup>		
Availability	• Africa & Middle East • Asia Pacific • Central America	• Europe • Latin America • North America	• South America
Additive	• Lubricant		
Features	• Good Creep Resistance • Good Wear Resistance • Homopolymer	• Low Friction • Lubricated • Medium Viscosity	• Ultrasonic Weldable
Uses	• Conveyors	• Engineering Parts	• Gears
RoHS Compliance	• Contact Manufacturer		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		
Part Marking Code (ISO 11469)	• >POM-S<		
Resin ID (ISO 1043)	• POM-S		
Product Category	• Low Wear and Friction Resins	• Unreinforced Resins	

Physical	Nominal Value Unit	Test Method
Density	1.39 g/cm <sup>3</sup>	ISO 1183
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	14 g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (190°C/2.16 kg)	12.0 cm <sup>3</sup> /10min	ISO 1133
Molding Shrinkage		ISO 294-4
Across Flow: 2.00 mm	1.7 %	
Flow: 2.00 mm	1.8 %	

Mechanical	Nominal Value Unit	Test Method
Tensile Modulus (23°C)	3000 MPa	ISO 527-2
Tensile Stress (Yield, 23°C)	65.0 MPa	ISO 527-2
Tensile Strain		
Yield, 23°C	11 %	ISO 527-2
Break, 23°C	35 %	ISO 527-2/50
Nominal Tensile Strain at Break (23°C)	23 %	ISO 527-2
Tensile Creep Modulus		ISO 899-1
1 hr	2400 MPa	
1000 hr	1600 MPa	
Flexural Modulus (23°C)	2800 MPa	ISO 178

Impact	Nominal Value Unit	Test Method
Charpy Notched Impact Strength		ISO 179/1eA
-30°C	6.0 kJ/m <sup>2</sup>	
23°C	7.0 kJ/m <sup>2</sup>	
Charpy Unnotched Impact Strength		ISO 179/1eU
-30°C	130 kJ/m <sup>2</sup>	
23°C	160 kJ/m <sup>2</sup>	
Notched Izod Impact Strength		ISO 180/1A
-40°C	5.0 kJ/m <sup>2</sup>	
23°C	6.0 kJ/m <sup>2</sup>	

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To find out more, visit [DuPont Performance Polymers](#) or contact the nearest DuPont location.

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Thermal	Nominal Value Unit	Test Method
Heat Deflection Temperature		
0.45 MPa, Unannealed	164 °C	ISO 75-2/B
1.8 MPa, Unannealed	97.0 °C	ISO 75-2/A
Melting Temperature <sup>3</sup>	178 °C	ISO 11357-3
CLTE		ISO 11359-2
Flow: -40 to 23°C	0.00010 cm/cm/°C	
Flow: 23 to 55°C	0.00012 cm/cm/°C	
Flow: 55 to 100°C	0.00015 cm/cm/°C	
Transverse: -40 to 23°C	0.00010 cm/cm/°C	
Transverse: 23 to 55°C	0.00012 cm/cm/°C	
Transverse: 55 to 100°C	0.00017 cm/cm/°C	
RTI Elec		UL 746
0.750 mm	50.0 °C	
1.50 mm	110 °C	
3.00 mm	110 °C	
RTI Imp		UL 746
0.750 mm	50.0 °C	
1.50 mm	85.0 °C	
3.00 mm	90.0 °C	
RTI Str		UL 746
0.750 mm	50.0 °C	
1.50 mm	90.0 °C	
3.00 mm	95.0 °C	

Flammability	Nominal Value Unit	Test Method
Flammability Classification		IEC 60695-11-10, -20
0.750 mm	HB	
1.50 mm	HB	
3.00 mm	HB	

Injection	Nominal Value Unit
Drying Temperature	80.0 °C
Drying Time - Desiccant Dryer	2.0 to 4.0 hr
Suggested Max Moisture	< 0.10 %
Processing (Melt) Temp	210 to 220 °C
Melt Temperature, Optimum - Injection Molding	215 °C
Mold Temperature	80.0 to 100 °C
Mold Temperature, Optimum - Injection Molding	90 °C

Drying Recommended Not normally required unless  
moisture content of resin exceeds  
recommended level

## Notes

<sup>1</sup> The above data are preliminary and are subject to change as additional data are developed on subsequent lots.

<sup>2</sup> Typical properties: these are not to be construed as specifications.

<sup>3</sup> 10°C/min



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Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc.

ISO Mechanical properties measured at 4.0mm, ISO Electrical properties measured at 2.0mm, and all ASTM properties measured at 3.2mm.

Test temperatures are 23°C unless otherwise stated.

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