

# DuPont™ Delrin® 911DP NC010

## ACETAL RESIN

### Product Information

Common features of Delrin® acetal resins include mechanical and physical properties such as high mechanical strength and rigidity, excellent fatigue and impact resistance, as well as resistance to moisture, gasoline, lubricants, solvents, and many other neutral chemicals. Delrin® acetal resins also have excellent dimensional stability and good electrical insulating characteristics. They are naturally resilient, self-lubricating, and available in a variety of colors and speciality grades.

Delrin® acetal resin typically is used in demanding applications in the automotive, domestic appliances, sports, industrial engineering, electronics, and consumer goods industries.

**Delrin® 911DP is a low viscosity acetal homopolymer with enhanced crystallisation for faster cycle times and excellent creep and fatigue resistance. It has improved thermal stability, excellent dimensional stability, low warpage and fewer voids.**

General information	Value	Unit	Test Standard	
Resin Identification	POM	-	ISO 1043	
Part Marking Code	POM	-	ISO 11469	
Rheological properties	Value	Unit	Test Standard	
Melt volume-flow rate	21	cm <sup>3</sup> /10min	ISO 1133	
Temperature	190	°C	ISO 1133	
Load	2.16	kg	ISO 1133	
Melt mass-flow rate	24	g/10min	ISO 1133	
Melt mass-flow rate, Temperature	190	°C	ISO 1133	
Melt mass-flow rate, Load	2.16	kg	ISO 1133	
Moulding shrinkage, parallel	1.9	%	ISO 294-4, 2577	
Moulding shrinkage, normal	1.8	%	ISO 294-4, 2577	
Mechanical properties	Value	Unit	Test Standard	
Tensile Modulus	3400	MPa	ISO 527-1/-2	
Yield stress	75	MPa	ISO 527-1/-2	
Yield strain	10	%	ISO 527-1/-2	
Nominal strain at break	20	%	ISO 527-1/-2	
Flexural Modulus	3300	MPa	ISO 178	
Flexural Stress at 3.5%	90	MPa	ISO 178	
Charpy impact strength			ISO 179/1eU	
23°C	160	kJ/m <sup>2</sup>		
-30°C	150	kJ/m <sup>2</sup>		
Charpy notched impact strength			ISO 179/1eA	
23°C	6.5	kJ/m <sup>2</sup>		
-30°C	6	kJ/m <sup>2</sup>		
Ball indentation hardness, H 961/30	175	MPa	ISO 2039-1	DS
DS: Derived from similar grade				
Thermal properties	Value	Unit	Test Standard	
Melting temperature, 10°C/min	178	°C	ISO 11357-1/-3	
Temp. of deflection under load			ISO 75-1/-2	
1.8 MPa	108	°C		
0.45 MPa	163	°C		
Coeff. of linear therm. expansion, parallel	100	E-6/K	ISO 11359-1/-2	
Coeff. of linear therm. expansion, normal	100	E-6/K	ISO 11359-1/-2	
RTI, electrical			UL 746B	
0.75mm	50	°C		
1.5mm	110	°C		
3mm	110	°C		
RTI, impact			UL 746B	
0.75mm	50	°C		
1.5mm	85	°C		
3mm	90	°C		

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

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				UL 746B
RTI, strength				
0.75mm	50	°C		
1.5mm	90	°C		
3mm	95	°C		
Flammability		Value	Unit	Test Standard
Burning Behav. at 1.5mm nom. thickn.	HB	class		IEC 60695-11-10
Thickness tested	1.5	mm		IEC 60695-11-10
UL recognition	yes	-		UL 94
Burning Behav. at thickness h	HB	class		IEC 60695-11-10
Thickness tested	0.8	mm		IEC 60695-11-10
UL recognition	yes	-		UL 94
FMVSS Class	B	-		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	25	mm/min		ISO 3795 (FMVSS 302)
Other properties		Value	Unit	Test Standard
Humidity absorption, 2mm	0.2	%		Sim. to ISO 62
Water absorption, 2mm	0.9	%		Sim. to ISO 62
Density	1420	kg/m <sup>3</sup>		ISO 1183
VDA Properties		Value	Unit	Test Standard
Emissions	<8	mg/kg		VDA 275
Fogging, F-value (refraction)	97	%		ISO 6452
Fogging, G-value (condensate)	0.1	mg		ISO 6452
Injection		Value	Unit	Test Standard
Drying Recommended	yes	-		-
Drying Temperature	≥80	°C		-
Drying Time, Dehumidified Dryer	2 - 4	h		-
Processing Moisture Content	≤0.2	%		-
Melt Temperature Optimum	215	°C		-
Min. melt temperature	210	°C		-
Max. melt temperature	220	°C		-
Mold Temperature Optimum	90	°C		-
Min. mould temperature	80	°C		-
Max. mould temperature	100	°C		-
Hold pressure range	80 - 100	MPa		-
Hold pressure time	7.5	s/mm		-
Annealing time, optional	30	min/mm		-
Annealing temperature	160	°C		-
Extrusion		Value	Unit	Test Standard
Drying Temperature	75 - 85	°C		-
Drying Time, Dehumidified Dryer	2 - 4	h		-
Processing Moisture Content	≤0.2	%		-
Melt Temperature Optimum	200	°C		-
Melt Temperature Range	195 - 205	°C		-

Characteristics			
Processing	• Injection Moulding	• Sheet Extrusion	
Delivery form	• Profile Extrusion	• Other Extrusion	
Additives	• Pellets	• Release agent	
Regional Availability	• North America	• Asia Pacific	• Near East/Africa
	• Europe	• South and Central America	• Global

### Processing Texts

#### Injection molding

Drying is recommended, but not necessary for newly opened packaging stored in a dry location.

Follow the drying guidelines above in the following cases:

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- If moisture is above the Processing Moisture Content recommendation,
- When a resin container is damaged,
- When the material is not properly stored in a dry place at room temperature, or
- When packaging stays open for a significant time.

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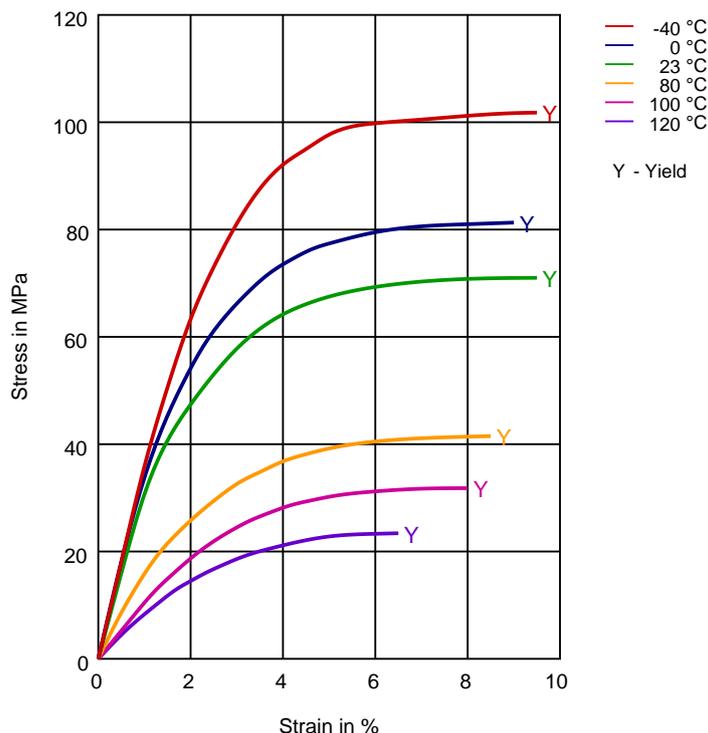


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### Diagrams

### Stress-strain



Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 4mm (Hytrell® measured at 2 mm), IEC Electrical properties measured at 2mm, all ASTM properties measured at 3.2mm, and test temperatures are 23 °C unless otherwise stated.

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