

DUPONT Delrin[®] 100ST

Super Toughened High Viscosity Acetal Homopolymer
Information provided by DuPont; Delrin was sold by DuPont in 2023.

Physical Properties	Metric	English	Comments
Density	1.34 g/cc	0.0484 lb/in ³	ISO 1183
Melt Density	1.14 g/cc @Temperature 205 °C	0.0412 lb/in ³ @Temperature 401 °F	
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
Linear Mold Shrinkage, Flow	0.0080 cm/cm	0.0080 in/in	ISO 294-4, 2577
Linear Mold Shrinkage, Transverse	0.011 cm/cm	0.011 in/in	ISO 294-4, 2577
Melt Flow	1.7 g/10 min @Load 2.16 kg, Temperature 190 °C	1.7 g/10 min @Load 4.76 lb, Temperature 374 °F	cm ³ /10min Volumetric; ISO 1133
	2.0 g/10 min @Load 2.16 kg, Temperature 190 °C	2.0 g/10 min @Load 4.76 lb, Temperature 374 °F	ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	58	58	ISO 2039-2
Hardness, Rockwell R	105	105	ISO 2039-2
Hardness, Shore D	70	70	15s; ISO 48-4
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
Flexural Strength	34.0 MPa @Strain 3.5 %	4930 psi @Strain 3.5 %	ISO 178
Flexural Modulus	1.10 GPa	160 ksi	ISO 178
Poissons Ratio	0.43	0.43	
Izod Impact, Notched (ISO)	20.0 kJ/m ² @Temperature -40.0 °C	9.52 ft-lb/in ² @Temperature -40.0 °F	ISO 180/1A
	90.0 kJ/m ² @Temperature 23.0 °C	42.8 ft-lb/in ² @Temperature 73.4 °F	ISO 180/1A
Charpy Impact Unnotched	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	ISO 179/1eU
	NB @Temperature 23.0 °C	NB @Temperature 73.4 °F	ISO 179/1eU
Charpy Impact, Notched	1.80 J/cm ² @Temperature -30.0 °C	8.57 ft-lb/in ² @Temperature -22.0 °F	ISO 179/1eA
	9.00 J/cm ² @Temperature 23.0 °C	42.8 ft-lb/in ² @Temperature 73.4 °F	ISO 179/1eA
Tensile Creep Modulus, 1 hour	1100 MPa	160000 psi	1h; ISO 899-1

Tensile Creep Modulus, 1000 hours	550 MPa	79800 psi	1000h; ISO 899-1
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Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+14 ohm-cm	1.00e+14 ohm-cm	IEC 62631-3-1
Surface Resistance	1.00e+14 ohm	1.00e+14 ohm	IEC 62631-3-2
Dielectric Constant	3.8 @Frequency 1e+6 Hz	3.8 @Frequency 1e+6 Hz	IEC 62631-2-1
	4.4 @Frequency 100 Hz	4.4 @Frequency 100 Hz	IEC 62631-2-1
Comparative Tracking Index	600 V	600 V	IEC 60112

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	130 $\mu\text{m}/\text{m}^{\circ}\text{C}$	72.2 $\mu\text{in}/\text{in}^{\circ}\text{F}$	ISO 11359-1/-2
CTE, linear, Transverse to Flow	140 $\mu\text{m}/\text{m}^{\circ}\text{C}$	77.8 $\mu\text{in}/\text{in}^{\circ}\text{F}$	ISO 11359-1/-2
Melting Point	178 $^{\circ}\text{C}$	352 $^{\circ}\text{F}$	10 $^{\circ}\text{C}/\text{min}$; ISO 11357-1/-3
Deflection Temperature at 0.46 MPa (66 psi)	100 $^{\circ}\text{C}$	212 $^{\circ}\text{F}$	ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	60.0 $^{\circ}\text{C}$	140 $^{\circ}\text{F}$	ISO 75-1/-2
Glass Transition Temp, Tg	-35.0 $^{\circ}\text{C}$	-31.0 $^{\circ}\text{F}$	10 $^{\circ}\text{C}/\text{min}$; ISO 11357-1/-2
Flammability, UL94	HB @Thickness 1.50 mm	HB @Thickness 0.0591 in	IEC 60695-11-10
Flame Spread	41.0 mm/min @Thickness 1.00 mm	1.61 in/min @Thickness 0.0394 in	ISO 3795 (FMVSS 302)

Processing Properties	Metric	English	Comments
Melt Temperature	200 $^{\circ}\text{C}$	392 $^{\circ}\text{F}$	Optimum, Extrusion
	195 - 205 $^{\circ}\text{C}$	383 - 401 $^{\circ}\text{F}$	Range, Extrusion
	200 - 210 $^{\circ}\text{C}$	392 - 410 $^{\circ}\text{F}$	Range, Injection
	205 $^{\circ}\text{C}$	401 $^{\circ}\text{F}$	Optimum, Injection
Mold Temperature	50.0 $^{\circ}\text{C}$	122 $^{\circ}\text{F}$	Optimum, Injection
	40.0 - 60.0 $^{\circ}\text{C}$	104 - 140 $^{\circ}\text{F}$	Injection
Drying Temperature	80.0 $^{\circ}\text{C}$	176 $^{\circ}\text{F}$	Injection
	80.0 $^{\circ}\text{C}$	176 $^{\circ}\text{F}$	Extrusion

Dry Time	4.00 - 8.00 hour	4.00 - 8.00 hour	Extrusion, Dehumidified Dryer
	4.00 - 8.00 hour	4.00 - 8.00 hour	Injection, Dehumidified Dryer
Moisture Content	<= 0.050 %	<= 0.050 %	Extrusion
	<= 0.050 %	<= 0.050 %	Injection
Hold Pressure	60.0 - 80.0 MPa	8700 - 11600 psi	Injection
	80.0 MPa	11600 psi	Injection
Annealing Temperature	160 °C	320 °F	Optional; 2 mm/min; Injection

Descriptive Properties

Additives	Release agent	
Annealing time (min/mm)	30	Optional, Injection
Drying Recommended	yes	Injection
Eff. thermal diffusivity (m ² /s)	6E-08	
Emissions (mg/kg)	<8	VDA 275
FMVSS Class	B	ISO 3795 (FMVSS 302)
Max. screw tangential speed (m/s)	0.2	Injection
Part Marking Code	>POM-HI<	ISO 11469
Polymer	POM	
Processing Hold Pressure Time (s/mm)	7.5	Injection
Resin Identification	POM-HI	ISO 1043