

DUPONT Delrin[®] 525GR

25% Glass Reinforced Medium Viscosity Acetal Homopolymer
Information provided by DuPont; Delrin was sold by DuPont in 2023.

Physical Properties	Metric	English	Comments
Density	1.59 g/cc	0.0574 lb/in ³	ISO 1183
Water Absorption	1.26 % @Thickness 2.00 mm	1.26 % @Thickness 0.0787 in	Sim. to ISO 62
Moisture Absorption	0.170 % @Thickness 2.00 mm	0.170 % @Thickness 0.0787 in	Sim. to ISO 62
Linear Mold Shrinkage, Flow	0.0040 cm/cm	0.0040 in/in	ISO 294-4, 2577
Linear Mold Shrinkage, Transverse	0.012 cm/cm	0.012 in/in	ISO 294-4, 2577
Melt Flow	8.0 g/10 min @Load 2.16 kg, Temperature 190 °C	8.0 g/10 min @Load 4.76 lb, Temperature 374 °F	ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	101	101	ISO 2039-2
Hardness, Rockwell R	122	122	ISO 2039-2
Tensile Strength at Break	160 MPa	23200 psi	ISO 527-1/-2
Elongation at Break	3.0 %	3.0 %	ISO 527-1/-2
Tensile Modulus	9.50 GPa	1380 ksi	ISO 527-1/-2
Flexural Strength	245 MPa @Strain 3.2 %	35500 psi @Strain 3.2 %	ISO 178
Flexural Modulus	9.15 GPa	1330 ksi	ISO 178
Compressive Strength	210 MPa	30500 psi	ISO 604
Poissons Ratio	0.34	0.34	
Charpy Impact Unnotched	5.00 J/cm ² @Temperature -30.0 °C	23.8 ft-lb/in ² @Temperature -22.0 °F	ISO 179/1eU
	6.00 J/cm ² @Temperature 23.0 °C	28.6 ft-lb/in ² @Temperature 73.4 °F	ISO 179/1eU
Charpy Impact, Notched	1.00 J/cm ² @Temperature -30.0 °C	4.76 ft-lb/in ² @Temperature -22.0 °F	ISO 179/1eA
	1.00 J/cm ² @Temperature 23.0 °C	4.76 ft-lb/in ² @Temperature 73.4 °F	ISO 179/1eA
Tensile Creep Modulus, 1 hour	8500 MPa	1.23e+6 psi	1h; ISO 899-1
Tensile Creep Modulus, 1000 hours	6000 MPa	870000 psi	1000h; ISO 899-1

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+14 ohm-cm	1.00e+14 ohm-cm	IEC 62631-3-1
Dielectric Constant	3.7 @Frequency 100 Hz	3.7 @Frequency 100 Hz	IEC 62631-2-1
	3.8 @Frequency 1e+6 Hz	3.8 @Frequency 1e+6 Hz	IEC 62631-2-1
Comparative Tracking Index	600 V	600 V	IEC 60112

Thermal Properties	Metric	English	Comments
--------------------	--------	---------	----------

CTE, linear, Parallel to Flow	35.0 $\mu\text{m}/\text{m}^{\circ}\text{C}$	19.4 $\mu\text{in}/\text{in}^{\circ}\text{F}$	ISO 11359-1/-2
CTE, linear, Transverse to Flow	100 $\mu\text{m}/\text{m}^{\circ}\text{C}$	55.6 $\mu\text{in}/\text{in}^{\circ}\text{F}$	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)	176 $^{\circ}\text{C}$	349 $^{\circ}\text{F}$	ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	172 $^{\circ}\text{C}$	342 $^{\circ}\text{F}$	ISO 75-1/-2
Flammability, UL94	HB @Thickness 0.750 mm	HB @Thickness 0.0295 in	IEC 60695-11-10
	HB @Thickness 1.50 mm	HB @Thickness 0.0591 in	IEC 60695-11-10
Flame Spread	49.0 mm/min @Thickness 1.00 mm	1.93 in/min @Thickness 0.0394 in	ISO 3795 (FMVSS 302)

Processing Properties	Metric	English	Comments
Melt Temperature	215 $^{\circ}\text{C}$	419 $^{\circ}\text{F}$	Optimum, Injection
	210 - 220 $^{\circ}\text{C}$	410 - 428 $^{\circ}\text{F}$	Range, Injection
Mold Temperature	90.0 $^{\circ}\text{C}$	194 $^{\circ}\text{F}$	Optimum, Injection
	80.0 - 100 $^{\circ}\text{C}$	176 - 212 $^{\circ}\text{F}$	Injection
Drying Temperature	80.0 $^{\circ}\text{C}$	176 $^{\circ}\text{F}$	Injection
Dry Time	2.00 - 4.00 hour	2.00 - 4.00 hour	Injection, Dehumidified Dryer
Moisture Content	$\leq 0.20\%$	$\leq 0.20\%$	Injection
Hold Pressure	80.0 - 100 MPa	11600 - 14500 psi	Injection
	100 MPa	14500 psi	Injection
Annealing Temperature	160 $^{\circ}\text{C}$	320 $^{\circ}\text{F}$	Optional; 2 mm/min; Injection