

DUPONT Delrin® 510GR

10% Glass Reinforced Medium Viscosity Acetal Homopolymer
Information provided by DuPont; Delrin was sold by DuPont in 2023.

Physical Properties	Metric	English	Comments
Density	1.49 g/cc	0.0538 lb/in ³	ISO 1183
Water Absorption	1.1 % @Thickness 2.00 mm	1.1 % @Thickness 0.0787 in	Sim. to ISO 62
Moisture Absorption	0.160 % @Thickness 2.00 mm	0.160 % @Thickness 0.0787 in	Sim. to ISO 62
Linear Mold Shrinkage, Flow	0.010 cm/cm	0.010 in/in	ISO 294-4, 2577
Linear Mold Shrinkage, Transverse	0.014 cm/cm	0.014 in/in	ISO 294-4, 2577
Melt Flow	12 g/10 min @Load 2.16 kg, Temperature 190 °C	12 g/10 min @Load 4.76 lb, Temperature 374 °F	cm ³ /10min Volumetric; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	100	100	ISO 2039-2
Hardness, Rockwell R	122	122	ISO 2039-2
Tensile Strength at Break	105 MPa	15200 psi	ISO 527-1/-2
Elongation at Break	3.7 %	3.7 %	ISO 527-1/-2
Tensile Modulus	5.50 GPa	798 ksi	ISO 527-1/-2
Flexural Strength	175 MPa	25400 psi	ISO 178
	160 MPa @Strain 3.5 %	23200 psi @Strain 3.5 %	ISO 178
Flexural Modulus	5.25 GPa	761 ksi	ISO 178
Poissons Ratio	0.35	0.35	
Izod Impact, Notched (ISO)	5.00 kJ/m ² @Temperature 23.0 °C	2.38 ft-lb/in ² @Temperature 73.4 °F	ISO 180/1A
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
	5.00 J/cm ² @Temperature 23.0 °C	23.8 ft-lb/in ² @Temperature 73.4 °F	ISO 179/1eU
Charpy Impact, Notched	0.500 J/cm ² @Temperature -30.0 °C	2.38 ft-lb/in ² @Temperature -22.0 °F	ISO 179/1eA
	0.650 J/cm ² @Temperature 23.0 °C	3.09 ft-lb/in ² @Temperature 73.4 °F	ISO 179/1eA
Tensile Creep Modulus, 1 hour	4800 MPa	696000 psi	1h; ISO 899-1
Tensile Creep Modulus, 1000 hours	3500 MPa	508000 psi	1000h; ISO 899-1

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+13 ohm-cm	1.00e+13 ohm-cm	IEC 62631-3-1
Dielectric Constant	3.7 @Frequency 100 Hz	3.7 @Frequency 100 Hz	IEC 62631-2-1
	3.9 @Frequency 1e+6 Hz	3.9 @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	70.0 µm/m-°C	38.9 µin/in-°F	ISO 11359-1/-2

CTE, linear, Transverse to Flow	100 µm/m-°C	55.6 µin/in-°F	ISO 11359-1/-2
Melting Point	178 °C	352 °F	10°C/min; ISO 11357-1/-3
Deflection Temperature at 0.46 MPa (66 psi)	174 °C	345 °F	ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	164 °C	327 °F	ISO 75-1/-2
Vicat Softening Point	160 °C	320 °F	50°C/h, 50N; ISO 306
Flammability, UL94	HB @Thickness 0.750 mm	HB @Thickness 0.0295 in	IEC 60695-11-10
Flame Spread	46.0 mm/min @Thickness 1.00 mm	1.81 in/min @Thickness 0.0394 in	ISO 3795 (FMVSS 302)

Processing Properties	Metric	English	Comments
Melt Temperature	215 °C	419 °F	Optimum, Injection
	210 - 220 °C	410 - 428 °F	Range, Injection
Mold Temperature	90.0 °C	194 °F	Optimum, Injection
	80.0 - 100 °C	176 - 212 °F	Injection
Drying Temperature	80.0 °C	176 °F	Injection
Dry Time	2.00 - 4.00 hour	2.00 - 4.00 hour	Injection, Dehumidified Dryer
Moisture Content	<= 0.20 %	<= 0.20 %	Injection
Hold Pressure	80.0 - 100 MPa	11600 - 14500 psi	Injection
	100 MPa	14500 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
FMVSS Class	B	ISO 3795 (FMVSS 302)
Fogging (mg)	0.65	G-value (condensate); ISO 6452
Max. screw tangential speed (m/s)	0.3	Injection
Part Marking Code	>POM-GF10<	ISO 11469
Polymer	POM-GF10	
Processing Hold Pressure Time (s/mm)	8	Injection
Resin Identification	POM-GF10	ISO 1043