

Product Texts

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® 510GR is a 10% glass-reinforced acetal homopolymer for injection molding. It has high strength, stiffness, and high deflection temperature and excellent creep resistance.

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
^[C] Melt volume-flow rate, MVR	12	cm ³ /10min	ISO 1133
Temperature	190	°C	-
Load	2.16	kg	-
^[C] Molding shrinkage, parallel	1.0	%	ISO 294-4, 2577
^[C] Molding shrinkage, normal	1.4	%	ISO 294-4, 2577
ASTM Data			
Melt Flow Index, MFI	7	g/10min	ASTM D 1238
Mold Shrinkage, MD	0.01	mm/mm	ASTM D 955
Mold Shrinkage, TD	0.0135	mm/mm	ASTM D 955

[C]: CAMPUS

Mechanical properties	Value	Unit	Test Standard
ISO Data			
^[C] Tensile Modulus	5500	MPa	ISO 527
^[C] Stress at break	105	MPa	ISO 527
^[C] Strain at break	3.7	%	ISO 527
^[C] Tensile creep modulus, 1h	4800	MPa	ISO 899-1
^[C] Tensile creep modulus, 1000h	3500	MPa	ISO 899-1
^[C] Charpy impact strength, +23°C	50	kJ/m ²	ISO 179/1eU
^[C] Charpy impact strength, -30°C	50	kJ/m ²	ISO 179/1eU
^[C] Charpy notched impact strength, +23°C	6.5	kJ/m ²	ISO 179/1eA
^[C] Charpy notched impact strength, -30°C	5	kJ/m ²	ISO 179/1eA
ASTM Data			
Tensile Modulus	6100	MPa	ASTM D 638
Tensile Strength	100	MPa	ASTM D 638
Elongation at Break	5	%	ASTM D 638
Flexural Modulus	4300	MPa	ASTM D 790
Rockwell Hardness	R 119	-	ASTM D 785
Izod Impact notched, 1/8 in	53	J/m	ASTM D 256

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Thermal properties	Value	Unit	Test Standard
ISO Data			
^[C] Melting temperature, 10°C/min	178	°C	ISO 11357-1/-3
^[C] Temp. of deflection under load, 1.80 MPa	164	°C	ISO 75-1/-2
^[C] Temp. of deflection under load, 0.45 MPa	174	°C	ISO 75-1/-2
^[C] Vicat softening temperature, B	160	°C	ISO 306
^[C] Coeff. of linear therm. expansion, parallel	70	E-6/K	ISO 11359-1/-2
^[C] Coeff. of linear therm. expansion, normal	100	E-6/K	ISO 11359-1/-2
^[C] Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	0.8	mm	-
Yellow Card available	yes	-	-
ASTM Data			
UL 94 Flame rating	HB	-	UL 94
Thickness tested	0.75	mm	-
Coefficient of Thermal Expansion, MD	70	E-6/K	ASTM D 696
Coefficient of Thermal Expansion, TD	100	E-6/K	ASTM D 696
DTUL @ 66 psi	176	°C	ASTM D 648
DTUL @ 264 psi	170	°C	ASTM D 648

Melting Temperature	178	°C	ASTM D 3418
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Electrical properties	Value	Unit	Test Standard
ISO Data			
^[C] Relative permittivity, 100Hz	3.7	-	IEC 62631-2-1
^[C] Relative permittivity, 1MHz	3.9	-	IEC 62631-2-1
^[C] Volume resistivity	1E11	Ohm*m	IEC 62631-3-1
^[C] Comparative tracking index	600	-	IEC 60112

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Other properties	Value	Unit	Test Standard
^[C] Water absorption	1.1	%	Sim. to ISO 62
^[C] Humidity absorption	0.16	%	Sim. to ISO 62
^[C] Density	1490	kg/m ³	ISO 1183
Density	1470	kg/m ³	ASTM D 792

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Characteristics

Processing

Injection Molding

Features

Creep Resistance, Fatigue Resistance, Homopolymer

Delivery form

Pellets, Natural Color

Regional Availability

North America, Europe, Asia Pacific, South and Central America, Near East/Africa

Additives

Release agent

Other text information

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:

- 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.