Delrin® 100 NC010

POM | Delrin

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® 100 is a high viscosity acetal homopolymer for use in easy-to-fill molds. Delrin® 100 provides optimum mechanical performance with its excellent combination of toughness and strength.

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
[C] Melt volume-flow rate, MVR	**1.9**	cm³/10min	ISO 1133
Temperature	**190**	°C	-
Load	**2.16**	kg	-
Melt flow index, MFI	**2.2**	g/10min	ISO 1133
Temperature	**190**	°C	-
Load	**2.16**	kg	-
[C] Molding shrinkage, parallel	**2.2**	%	ISO 294-4, 2577
[C] Molding shrinkage, normal	**1.9**	%	ISO 294-4, 2577
Density of melt	**1190**	kg/m³	-
ASTM Data			
Melt Flow Index, MFI	**1**	g/10min	ASTM D 1238
Temperature	**190**	°C	-
Load	**1.05**	kg	-
Mold Shrinkage, MD	**0.0195**	mm/mm	ASTM D 955
Mold Shrinkage, TD	**0.0195**	mm/mm	ASTM D 955

[C]: CAMPUS

Mechanical properties	Value	Unit	Test Standard
ISO Data			
[C] Tensile Modulus	**2900**	MPa	ISO 527
[C] Yield stress	**71**	MPa	ISO 527
[C] Yield strain	**26**	%	ISO 527
[C] Nominal strain at break	**45**	%	ISO 527
Flexural modulus, 23°C	**2800**	MPa	ISO 178
Flexural strength	**93**	MPa	ISO 178
[C] Tensile creep modulus, 1h	**2900**	MPa	ISO 899-1
[C] Tensile creep modulus, 1000h	**1600**	MPa	ISO 899-1
[C] Charpy impact strength, +23°C	**N**	kJ/m²	ISO 179/1eU
[C] Charpy impact strength, -30°C	**425**	kJ/m²	ISO 179/1eU
[C] Charpy notched impact strength, +23°C	**15**	kJ/m²	ISO 179/1eA
[C] Charpy notched impact strength, -30°C	**13**	kJ/m²	ISO 179/1eA
Izod notched impact strength, +23°C	**14**	kJ/m²	ISO 180/1A
Izod notched impact strength	**13**	kJ/m²	ISO 180/1A
Temperature	**-40**	°C	-
[C] Abrasion resistance	**4**	mm³	ISO 4649
Rockwell hardness	**M 90**	-	ISO 2039-2
Ball indentation hardness	**173**	MPa	ISO 2039-1
ASTM Data			
Tensile Modulus	**3120**	MPa	ASTM D 638
Tensile Strength at Yield	**69**	MPa	ASTM D 638
Elongation at Yield	**25**	%	ASTM D 638
Elongation at Break	**75**	%	ASTM D 638
Flexural Modulus	**2890**	MPa	ASTM D 790
Rockwell Hardness	**R 120**	-	ASTM D 785
Izod Impact notched, 1/8 in	**120**	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	**96**	J/m	ASTM D 256
Temperature	**-40**	°C	-
Other Standards[S]			
Compressive Strength	**110**	MPa	ISO 604

S: These properties are reported by the producer according standards that are different to our defaults. [C]: CAMPUS

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	**95**	°C	ISO 75-1/-2
[C] Temp. of deflection under load, 0.45 MPa	**160**	°C	ISO 75-1/-2
Vicat softening temperature, A	**175**	°C	ISO 306
[C] Vicat softening temperature, B	**160**	°C	ISO 306
[C] Coeff. of linear therm. expansion, parallel	**110**	E-6/K	ISO 11359-1/-2
[C] Coeff. of linear therm. expansion, normal	**110**	E-6/K	ISO 11359-1/-2
[C] Burning Behav. at 1.5 mm nom. thickn.	**HB**	class	IEC 60695-11-10
Thickness tested	**1.5**	mm	-
Yellow Card available	**yes**	-	-
[C] Burning Behav. at thickness h	**HB**	class	IEC 60695-11-10
Thickness tested	**0.8**	mm	-
Yellow Card available	**yes**	-	-
Burning rate, FMVSS, Thickness 1 mm	**50**[1]	mm/min	ISO 3795 (FMVSS 302)
Glow Wire Flammability Index (GWFI)	**550**	°C	IEC 60695-2-12
GWFI - thickness tested (1)	**1**	mm	-
Glow Wire Flammability Index (GWFI)	**550**	°C	IEC 60695-2-12
GWFI - thickness tested (2)	**2**	mm	-
Glow Wire Flammability Index (GWFI)	**550**	°C	IEC 60695-2-12
GWFI - thickness tested (3)	**3**	mm	-
Glow Wire Ignition Temperature (GWIT)	**550**	°C	IEC 60695-2-13
GWIT - thickness tested (1)	**0.4**	mm	-
Glow Wire Ignition Temperature (GWIT)	**550**	°C	IEC 60695-2-13
GWIT - thickness tested (2)	**0.75**	mm	-
Glow Wire Ignition Temperature (GWIT)	**550**	°C	IEC 60695-2-13
GWIT - thickness tested (3)	**1**	mm	-
ASTM Data			
UL 94 Flame rating	**HB**	-	UL 94
Thickness tested	**1.5**	mm	-
Coefficient of Thermal Expansion, MD	**110**	E-6/K	ASTM D 696
Coefficient of Thermal Expansion, TD	**110**	E-6/K	ASTM D 696
DTUL @ 66 psi	**168**	°C	ASTM D 648
DTUL @ 264 psi	**108**	°C	ASTM D 648
Melting Temperature	**178**	°C	ASTM D 3418
Other Standards[S]			
Specific Heat	**3000**	J/(kg K)	

1: Thickness 1 mm S: These properties are reported by the producer according standards that are different to our defaults. [C]: CAMPUS

Electrical properties	Value	Unit	Test Standard
ISO Data			
[C] Relative permittivity, 100Hz	**3.9**	-	IEC 62631-2-1
[C] Relative permittivity, 1MHz	**3.8**	-	IEC 62631-2-1
[C] Dissipation factor, 100Hz	**10**	E-4	IEC 62631-2-1
[C] Dissipation factor, 1MHz	**55**	E-4	IEC 62631-2-1
[C] Volume resistivity	**>1E13**	Ohm*m	IEC 62631-3-1
[C] Surface resistivity	**3E13**	Ohm	IEC 62631-3-2
[C] Electric strength	**41**	kV/mm	IEC 60243-1
[C] Comparative tracking index	**600**	-	IEC 60112
ASTM Data			
Dielectric Strength, Short Time	**16.5**	kV/mm	ASTM D 149
Dissipation Factor, 1 MHz	**0.005**	-	ASTM D 150
Dielectric Constant, 1 MHz	**3.6**	-	ASTM D 150
Surface Resistivity	**>1E15**	Ohm	ASTM D 257
Volume Resistivity	**1E15**	Ohm*cm	ASTM D 257

[C]: CAMPUS

Other properties	Value	Unit	Test Standard
[C] Water absorption	**0.9**	%	Sim. to ISO 62
[C] Humidity absorption	**0.2**	%	Sim. to ISO 62
[C] Density	**1420**	kg/m³	ISO 1183
Water Absorption, 24hr	**0.27**	%	ASTM D 570
Water Absorption, Equilibrium	**0.22**	%	ASTM D 570
Density	**1420**	kg/m³	ASTM D 792

[C]: CAMPUS

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	**80**	°C	-
Pre-drying - Time	**2 - 4**	h	-
Processing humidity	**≤0.2**	%	-
Melt temperature	**210 - 220**	°C	-
Mold temperature	**80 - 100**	°C	-
Holding pressure	**90 - 110**	MPa	-

Processing Recommendation Extrusion	Value	Unit	Test Standard
Pre-drying - Temperature	**80**	°C	-
Pre-drying - Time	**2 - 4**	h	-
Processing humidity	**≤0.2**	%	-
Melt temperature	**195 - 205**	°C	-

Characteristics

Processing
Injection Molding, Pipe/Tube Extrusion, Profile Extrusion, Sheet Extrusion, Other Extrusion

Delivery form
Pellets, Natural Color

Additives
Lubricants, Release agent

Special Characteristics
High impact or impact modified

Features
Creep Resistance, Fatigue Resistance, Weldable, Homopolymer

Chemical Resistance
General Chemical Resistance, Solvent Resistance

Applications
Automotive, Electrical and Electronical, Sports Equipment

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

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.