

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® 500TL is a medium viscosity acetal homopolymer containing 1.5% PTFE Micropowder lubricant. It is designed for applications requiring reduced wear and friction against steel, itself, or other plastics.

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	1.8	%	ISO 294-4, 2577
^[C] Molding shrinkage, normal	1.7	%	ISO 294-4, 2577
ASTM Data			
Melt Flow Index, MFI	6	g/10min	ASTM D 1238
Temperature	190	°C	-
Load	1.05	kg	-
Mold Shrinkage, MD	0.018	mm/mm	ASTM D 955
Mold Shrinkage, TD	0.017	mm/mm	ASTM D 955

[C]: CAMPUS

Mechanical properties	Value	Unit	Test Standard
ISO Data			
^[C] Tensile Modulus	3300	MPa	ISO 527
^[C] Yield stress	71	MPa	ISO 527
^[C] Yield strain	13	%	ISO 527
^[C] Nominal strain at break	20	%	ISO 527
^[C] Charpy impact strength, +23°C	170	kJ/m ²	ISO 179/1eU
^[C] Charpy impact strength, -30°C	160	kJ/m ²	ISO 179/1eU
^[C] Charpy notched impact strength, +23°C	5	kJ/m ²	ISO 179/1eA
^[C] Charpy notched impact strength, -30°C	4	kJ/m ²	ISO 179/1eA
ASTM Data			
Tensile Modulus	3100	MPa	ASTM D 638
Tensile Strength at Yield	67	MPa	ASTM D 638
Elongation at Yield	12	%	ASTM D 638
Elongation at Break	25	%	ASTM D 638
Flexural Modulus	3080	MPa	ASTM D 790
Rockwell Hardness	R 123	-	ASTM D 785
Izod Impact notched, 1/8 in	59	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	43	J/m	ASTM D 256
Temperature	-40	°C	-

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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	103	°C	ISO 75-1/-2
^[C] Temp. of deflection under load, 0.45 MPa	165	°C	ISO 75-1/-2
^[C] Coeff. of linear therm. expansion, parallel	100	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 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	3.0	mm	-
Yellow Card available	yes	-	-

Delrin® 500TL NC010

(POM+PTFE)-Z

Delrin

ASTM Data

UL 94 Flame rating	HB	-	UL 94
Thickness tested	1.5	mm	-
Coefficient of Thermal Expansion, MD	100	E-6/K	ASTM D 696
Coefficient of Thermal Expansion, TD	100	E-6/K	ASTM D 696
DTUL @ 66 psi	166	°C	ASTM D 648
DTUL @ 264 psi	100	°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	3.6	-	IEC 62631-2-1
^[C] Relative permittivity, 1MHz	3.6	-	IEC 62631-2-1
^[C] Volume resistivity	1E12	Ohm*m	IEC 62631-3-1
^[C] Comparative tracking index	600	-	IEC 60112

ASTM Data

Dielectric Strength, Short Time	16.5	kV/mm	ASTM D 149
Dissipation Factor, 1 MHz	0.006	-	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

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Other properties

	Value	Unit	Test Standard
^[C] Water absorption	0.9	%	Sim. to ISO 62
^[C] Humidity absorption	0.17	%	Sim. to ISO 62
^[C] Density	1430	kg/m ³	ISO 1183
Water Absorption, 24hr	0.19	%	ASTM D 570
Water Absorption, Equilibrium	0.11	%	ASTM D 570
Density	1430	kg/m ³	ASTM D 792

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Characteristics**Processing**

Injection Molding, Film Extrusion, Pipe/Tube Extrusion, Sheet Extrusion, Wire/Cable Extrusion

Features

Creep Resistance, Fatigue Resistance, Tribologic Grade, Weldable, Homopolymer

Delivery form

Pellets, Natural Color

Regional Availability

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

Additives

Lubricants, 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.