



# DuPont™ Delrin® acetal resin

PRODUCT AND PROPERTY GUIDE



*The miracles of science™*

### General Description

DuPont™ Delrin® acetal resin, the world's first acetal polymer, is a highly versatile engineering polymer. It offers an excellent balance of desirable properties that bridges the gap between metals and ordinary plastics. Since its introduction in 1960, it has been widely used around the world in many applications, such as the automotive, industrial, electronic, and consumer goods industries. Delrin® has gained widespread recognition for its reliability and performance in thousands of engineering components all over the world. Delrin® is the DuPont registered trademark for its brand of acetal resin also commonly referred to as polyoxymethylene (POM).

### Properties and Characteristics

The chemical composition, regular molecular structure and high degree of crystallinity result in a unique combination of outstanding characteristics of Delrin® acetal resins not found in metals or most other plastics:

- High mechanical strength and rigidity
- Toughness and high resistance to repeated impacts
- Long-term fatigue endurance
- Excellent resistant to moisture, gasoline, solvents, and many other chemicals of neutral pH
- Excellent dimensional stability
- Good resilience and resistance to creep
- Natural lubricity
- Wide end-use temperature range
- Good electrical insulating characteristics

### Compositions

General purpose grades of Delrin® are available in several basic melt flow series: 100, 300, 500, and 900. These differ primarily in melt viscosity with 100 being the most viscous and 900 being the most fluid. The most appropriate grade for a given application will depend largely upon fill requirements and end-use properties.

A wide range of grades of Delrin® acetal resin are available to meet specific customer needs for demanding applications:

- Unreinforced resins
- Toughened and super tough resins
- UV-stabilized grades
- Low friction and low wear grades
- Glass-filled and glass-reinforced grades
- Low emission grades
- Extrusion grades

A complete listing of general purpose Delrin® and Delrin® specialty products can be found in Table 1.

### Processing

The most commonly used method for processing Delrin® is injection molding. The surface finish of correctly molded parts of Delrin® replicate the surface finish and shape of the mold. Standard extrusion equipment can be used to extrude the resin into rods, slabs, sheeting, and small diameter tubing. Parts or stock shapes can be machined or stamped.

Consult the Delrin® Molding Guide for detailed recommendations on optimum molding.



## DuPont™ Delrin® Product Offering

<b>Unreinforced, General Purpose</b>	Delrin® 100P BK602	High viscosity acetal homopolymer, best combination of stiffness and toughness.
	Delrin® 100P NC010	
	Delrin® 111P BK402	High viscosity acetal homopolymer, with enhanced crystallization.
	Delrin® 111P NC010	
	Delrin® II 100 NC010	High viscosity acetal homopolymer, excellent creep and fatigue resistance.
	Delrin® 311DP BK402	Medium-high viscosity acetal homopolymer, enhanced crystallization and dimensional stability.
	Delrin® 311DP NC010	
	Delrin® 500P BK602	Medium viscosity acetal homopolymer, balance of impact and flow properties.
	Delrin® 500P NC010	
	Delrin® 511P BK402	Medium viscosity acetal homopolymer, enhanced crystallization.
	Delrin® 511P NC010	
	Delrin® 900P BK602	Low viscosity acetal homopolymer, high flow.
Delrin® 900P NC010		
<b>Extrusion Resins</b>	Delrin® 150 NC010	High viscosity acetal homopolymer for extrusion.
<b>Toughened Resins</b>	Delrin® 100ST BK602	Super Tough, high viscosity acetal homopolymer, highest impact strength.
	Delrin® 100ST NC010	
	Delrin® 100T BK602	Toughened, high viscosity acetal homopolymer, high impact strength.
	Delrin® 100T NC010	
	Delrin® 500T BK602	Toughened, medium viscosity acetal homopolymer, high impact strength.
Delrin® 500T NC010		
<b>UV Resistant / Weatherable Resins</b>	Delrin® 127UV BK701	UV Stabilized acetal homopolymer, high viscosity.
	Delrin® 127UV NC010	
	Delrin® 327UV NC010	UV Stabilized acetal homopolymer, medium-high viscosity.
	Delrin® 527UV BK701	UV Stabilized acetal homopolymer, medium viscosity.
Delrin® 527UV NC010		
<b>Low Wear and Friction Resins</b>	Delrin® 100AL NC010	High viscosity acetal homopolymer with advanced lubricants for low wear & friction.
	Delrin® 100KM BK402	Acetal homopolymer with Kevlar® Aramid Resin for with outstanding abrasion resistance.
	Delrin® 100KM NC000	
	Delrin® 100TL NC010	High viscosity acetal homopolymer with 1.5% PTFE Micropowder.
	Delrin® 500AF	20% Teflon® PTFE Fiber in Acetal Homopolymer.
	Delrin® 500AL NC010	Medium viscosity acetal homopolymer, with Advanced Lubricants for low wear & friction.
	Delrin® 500CL BK601	Medium viscosity acetal homopolymer, chemically lubricated.
	Delrin® 500CL NC010	
	Delrin® 500MP NC010	Medium viscosity acetal homopolymer with Teflon® PTFE Micropowder and additional lubricant.
	Delrin® 500TL NC010	1.5% Teflon® PTFE Micropowder in acetal homopolymer.
	Delrin® 520MP NC010	20% Teflon® PTFE Micropowder in acetal homopolymer.
	Delrin® 911AL NC010	Low viscosity acetal homopolymer, with Advanced Lubricants for low wear & friction and dimensionally stable parts.
	Delrin® 500SC NC010	Silicone Concentrate.
<b>Glass Filled / Reinforced Resins</b>	Delrin® 570 NC000	20% Glass Fiber filled acetal homopolymer.
	Delrin® 510GR NC000	10% Glass Reinforced acetal homopolymer, high strength and stiffness.
	Delrin® 525GR NC000	25% Glass Reinforced acetal homopolymer, very high strength and stiffness.
<b>Low Emissions Resins</b>	Delrin® 100PE NC010	High viscosity acetal homopolymer with low emissions.
	Delrin® 500PE NC010	Medium viscosity acetal homopolymer with low emissions.

## Delrin® Product Guide Table

				Unreinforced				
Property		Method	Units	Delrin® 100P BK602	Delrin® 100P NC010	Delrin® 111P BK402	Delrin® 111P NC010	
Resin Identification		ISO 1043		POM	POM	POM	POM	
Part Marking Code		ISO 11469		>POM<	>POM<	>POM<	>POM<	
<b>Mechanical</b>	Yield Stress	ISO 527	MPa kpsi	71 10.3	70 10.2	72 10.4	72 10.4	
	Yield Strain	ISO 527	%	22	25	20	20	
	Stress at Break	ISO 527	MPa kpsi					
	Strain at Break	ISO 527	%	50	65	45	50	
	Nominal Strain at Break	ISO 527	%	35	45	30	35	
	Tensile Modulus	ISO 527	MPa kpsi	3000 435	2900 420	3200 465	3200 464	
	Tensile Creep Modulus	ISO 899	MPa kpsi		2700 392		3000 435	
		1h			1500		1700	
		1000h			218		247	
	Flexural Modulus	ISO 178	MPa kpsi	2800 405	2600 377	2900 420	2900 420	
	Flexural Stress	ISO 178	MPa kpsi		74 10.7		80 11.6	
		@ 3.5% Strain						
Notched Charpy Impact Strength	ISO 179/1eA	-30°C (-22°F) 23°C (73°F)	kJ/m2	10 11	11 14	8 9	9 11	
Unnotched Charpy Impact Strength	ISO 179/1eU	-30°C (-22°F) 23°C (73°F)	kJ/m2		350 NB		270 300	
<b>Thermal</b>	Deflection Temperature	ISO 75-1/-2	C F	165 330	160 320	166 330	165 329	
			C F	93 200	93 200	100 212	100 212	
	Melting Temperature	ISO 11357-1/-3	C F	178 352	178 352	178 352	178 352	
	CLTE, Parallel	ISO 11359-1/-2	-40 - 23°C (-40 - 73°F)	E-4/C E-4/F	1.0 0.56	1.1 0.61		0.94 0.52
			23 - 55°C (73 - 130°F)	E-4/C E-4/F	1.1 0.61	1.1 0.61		1.0 0.56
			55 - 100°C (130 - 212°F)	E-4/C E-4/F	1.5 0.83	1.5 0.84		1.3 0.72
	CLTE, Normal	ISO 11359-1/-2	-40 - 23°C (-40 - 73°F)	E-4/C E-4/F	1.0 0.56	1.0 0.56		0.94 0.52
			23 - 55°C (73 - 130°F)	E-4/C E-4/F	1.1 0.61	1.1 0.61		1.1 0.61
			55 - 100°C (130 - 212°F)	E-4/C E-4/F	1.5 0.83	1.5 0.82		1.4 0.78
	Vicat Softening Temperature	ISO 306	50N	C F		160 320		160 320
	<b>Rheological</b>	Melt Mass-Flow Rate	ISO 1133	g/10 min	2.5	2.5	2.4	2.4
<b>Electrical</b>	Surface Resistivity	IEC 60093	ohm		>1E15			
	Volume Resistivity	IEC 60093	ohm m		1E12			
	Electric Strength	IEC 60243-1	kV/mm V/mil		32 812			
		1.0mm						
	Relative Permittivity	IEC 60250			3.8 3.7			
		1E2 Hz 1E6 Hz						
Dissipation Factor	IEC 60250		E-4		200 40			
	1E2 Hz 1E6 Hz							
CTI	IEC 60112		V		600		600	

## Delrin® Product Guide Table

				Unreinforced				
Property		Method	Units	Delrin® 100P BK602	Delrin® 100P NC010	Delrin® 111P BK402	Delrin® 111P NC010	
<b>Flammability</b>	Flammability Classification	0.75mm	IEC 60695-11-10	HB	HB			
		0.84mm		HB	HB	HB	HB	
		0.8mm		HB	HB	HB	HB	
	Flammability Classification	1.5mm	UL94	HB	HB	HB	HB	
		3.0mm		HB	HB	HB	HB	
		0.75mm		HB	HB	HB	HB	
Oxygen Index		ISO 4589-1/-2	%		21			
High Amperage Arc Ignition Resistance	0.75mm	UL 746A	arcs					
Hot Wire Ignition	0.75mm 1.5mm 3.0mm	UL 746A	s					
<b>Temperature Index</b>	RTI, Electrical	0.75mm	UL 746B	C	50	50		
		0.84mm			110	110	110	110
		0.85mm			110	110	110	110
	RTI, Impact	0.75mm	UL 746B	C	50	50		
		0.84mm			85	85	85	85
		0.85mm			90	90	90	90
	RTI, Strength	0.8mm	UL 746B	C	50	50		
		1.5mm			90	90	90	90
		3.0mm			95	95	95	95
<b>Other</b>	Density		ISO 1183	kg/m3 g/cm3	1420 1.42	1420 1.42	1420 1.42	
	Hardness, Rockwell	Scale M	ISO 2039/2			92	92	
		Scale R				120	120	
	Water Absorption	Equilibrium 50%RH	ISO 62, Similar to		%		0.3	
		Immersion 24h					1.4	1.0
Molding Shrinkage	Saturation, immersed Normal, 2.0mm Parallel, 2.0mm	ISO 294-4		%	1.8 2.1	2.0 2.2	1.9 2.1	
<b>Processing</b>	Melt Temperature Range			C	210-220	210-220	210-220	
				F	410-430	410-430	410-430	
	Melt Temperature Optimum			C	215	215	215	
				F	420	420	420	
	Mold Temperature Range			C	80-100	80-100	80-100	
				F	175-212	175-210	175-212	
	Mold Temperature Optimum			C	90	90	90	
				F	195	195	195	
	Drying Time, Dehumidified Dryer			h	2-4	2-4	2-4	
	Drying Temperature			C	80	80	80	
			F	175	175	175		
Processing Moisture Content			%	<0.2	<0.2	<0.2		
Hold Pressure Range			MPa kpsi	90-110 13-15	90-110 13-16	90-110 13-16		

### Delrin® Product Guide Table

				Unreinforced					
Property		Method	Units	Delrin® II 100 NC010	Delrin® 311DP BK402	Delrin® 311DP NC010	Delrin® 500P BK602	Delrin® 500P NC010	
Resin Identification		ISO 1043		POM	POM	POM	POM	POM	
Part Marking Code		ISO 11469		>POM<	>POM<	>POM<	>POM<	>POM<	
<b>Mechanical</b>	Yield Stress	ISO 527	MPa kpsi	71 10.2	74 10.7	73 10.6	71 10.3	70 10.1	
	Yield Strain	ISO 527	%	25	15	16	14	17	
	Stress at Break	ISO 527	MPa kpsi						
	Strain at Break	ISO 527	%	63	35		35	40	
	Nominal Strain at Break	ISO 527	%	41	25	35	25	30	
	Tensile Modulus	ISO 527	MPa kpsi	3100 450	3300 480	3300 480	3100 450	3100 450	
	Tensile Creep Modulus	ISO 899	MPa kpsi					2800 406	
								1600 232	
	Flexural Modulus	ISO 178	MPa kpsi	2800 406		3100 450	3000 435	2900 420	
	Flexural Stress	ISO 178	MPa kpsi			86 12.5		80 11.6	
	Notched Charpy Impact Strength	ISO 179/1eA	kJ/m2	12 15	8 8	9 10	7 8	8 9	
	Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m2			250 300	180	220 300	
<b>Thermal</b>	Deflection Temperature	ISO 75-1/-2	C F	165 330		165 330	162 324	158 316	
			C F	98 210	103 217	103 217	96 205	94 201	
	Melting Temperature	ISO 11357-1/-3	C F	178 352	178 352	178 352	178 352	178 352	
	CLTE, Parallel	ISO 11359-1/-2	E-4/C E-4/F	1.0 0.56		0.96 0.53	0.94 0.52	1.0 0.56	
			E-4/C E-4/F	1.0 0.56		1.1 0.61	1.1 0.61	1.1 0.61	
			E-4/C E-4/F	1.46 0.81		1.30 0.72	1.47 0.82	1.5 0.82	
	CLTE, Normal	ISO 11359-1/-2	E-4/C E-4/F	0.98 0.54		0.95 0.53	0.98 0.54	1.0 0.56	
			E-4/C E-4/F	1.1 0.61		1.1 0.61	1.15 0.64	1.1 0.61	
			E-4/C E-4/F	1.53 0.85		1.4 0.78	1.67 0.93	1.6 0.9	
	Vicat Softening Temperature	ISO 306	C F					157 315	
	<b>Rheological</b>	Melt Mass-Flow Rate	ISO 1133	g/10 min	2.3	7	7	15	15
	<b>Electrical</b>	Surface Resistivity	IEC 60093	ohm			>1E15		1E15
Volume Resistivity		IEC 60093	ohm m			1E13		1E12	
Electric Strength		IEC 60243-1	kV/mm V/mil					33 838	
Relative Permittivity		IEC 60250				3.8		3.9 3.9	
Dissipation Factor		IEC 60250	E-4					200 60	
CTI		IEC 60112	V				600	600	

## Delrin® Product Guide Table

		Unreinforced							
Property		Method	Units	Delrin® II 100 NC010	Delrin® 311DP BK402	Delrin® 311DP NC010	Delrin® 500P BK602	Delrin® 500P NC010	
Flammability	Flammability Classification	0.75mm	IEC 60695-11-10			HB	HB	HB	
		0.84mm			HB				
		0.8mm			HB	HB	HB		
	Flammability Classification	1.5mm	UL94			HB		HB	
		3.0mm			HB	HB			
		0.75mm			HB				
Oxygen Index		ISO 4589-1/-2	%					22	
High Amperage Arc Ignition Resistance	0.75mm	UL 746A	arcs				200	200	
Hot Wire Ignition	0.75mm	UL 746A	s				8	8	
	1.5mm			11	11				
	3.0mm			15	15				
Temperature Index	RTI, Electrical	0.75mm	UL 746B	C		50	50	50	
		0.84mm			50				
		0.85mm			110	110	110		
		0.8mm			110	110			
	RTI, Impact	1.5mm	UL 746B	C		50	50	50	50
		3.0mm			85	85	85	85	
		0.75mm			90	90	90	90	
		0.84mm			90	90	90	90	
	RTI, Strength	0.85mm	UL 746B	C		50	50	50	50
		0.8mm			90	90	90	90	
		1.5mm			95	95	95	95	
		3.0mm			95	95	95	95	
Other	Density	ISO 1183	kg/m3 g/cm3	1420 1.42	1420 1.42	1420 1.42	1420 1.42	1420 1.42	
	Hardness, Rockwell	Scale M	ISO 2039/2					92	
		Scale R						120	
	Water Absorption	Equilibrium 50%RH	ISO 62, Similar to	%			0.1		0.3
		Immersion 24h Saturation, immersed					0.4		0.6
Molding Shrinkage	Normal, 2.0mm	ISO 294-4	%	2.0		1.8		1.9	
	Parallel, 2.0mm			1.9		1.9		2.0	
Processing	Melt Temperature Range		C	210-220	210-220	210-220	210-220	210-220	
			F	410-430	410-430	410-430	410-430	410-430	
	Melt Temperature Optimum		C	215	215	215	215	215	
			F	420	420	420	420	420	
	Mold Temperature Range		C	80-100	80-100	80-100	80-100	80-100	
			F	175-210	175-212	175-210	175-210	175-210	
	Mold Temperature Optimum		C	90	90	90	90	90	
			F	195	195	195	195	195	
	Drying Time, Dehumidified Dryer			h	2-4	2-4	2-4	2-4	2-4
	Drying Temperature			C	80	80	80	80	80
			F	175	175	175	175	175	
Processing Moisture Content			%	<0.2	<0.2	<0.2	<0.2	<0.2	
Hold Pressure Range			MPa	90-110	80-100	80-100	80-100	80-100	
			kpsi	13-16	12-15	12-15	12-15	12-15	

### Delrin® Product Guide Table

				Unreinforced				
Property		Method	Units	Delrin® 511P BK402	Delrin® 511P NC010	Delrin® 900P BK602	Delrin® 900P NC010	
Resin Identification		ISO 1043		POM	POM	POM	POM	
Part Marking Code		ISO 11469		>POM<	>POM<	>POM<	>POM<	
<b>Mechanical</b>	Yield Stress	ISO 527	MPa kpsi	73 10.6	73 10.6	70 10.2	71 10.3	
	Yield Strain	ISO 527	%	12	12	12	13	
	Stress at Break	ISO 527	MPa kpsi					
	Strain at Break	ISO 527	%	27	35	22	28	
	Nominal Strain at Break	ISO 527	%	20	25	17	23	
	Tensile Modulus	ISO 527	MPa kpsi	3400 495	3400 490	3300 479	3300 479	
	Tensile Creep Modulus	ISO 899	MPa kpsi		3000 435		2800 406	
		1000h			1700 247		1500 218	
	Flexural Modulus	ISO 178	MPa kpsi	3100 450	3100 450	3000 435	3000 435	
	Flexural Stress	ISO 178	MPa kpsi		90 13.1			
	Notched Charpy Impact Strength	ISO 179/1eA	kJ/m2	6 7	7 8	6 7	7 8	
	Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m2	170 170	220 260	130	200 200	
<b>Thermal</b>	Deflection Temperature	ISO 75-1/-2	C F	165 329	165 329	161 322	162 324	
			C F	105 221	107 225	98 210	94 201	
	Melting Temperature	ISO 11357-1/-3	C F	178 352	178 352	178 352	178 352	
	CLTE, Parallel	-40 - 23°C (-40 - 73°F)	ISO 11359-1/-2	E-4/C	0.90	0.96	0.90	
		23 - 55°C (73 - 130°F)		E-4/F	0.50	0.53	0.50	
				E-4/C	1.0	1.2	1.0	1.2
	CLTE, Normal	55 - 100°C (130 - 212°F)	ISO 11359-1/-2	E-4/F	0.56	0.67	0.56	0.67
		-40 - 23°C (-40 - 73°F)		E-4/C	1.3	1.30	1.3	
				E-4/F	0.72	0.72	0.72	
	CLTE, Normal	23 - 55°C (73 - 130°F)	ISO 11359-1/-2	E-4/C	0.9	0.96	0.9	
		55 - 100°C (130 - 212°F)		E-4/F	0.5	0.53	0.5	
				E-4/C	1.0	1.2	1.0	1.2
Vicat Softening Temperature	50N	ISO 306	C		160		160	
			F		320		320	
<b>Rheological</b>	Melt Mass-Flow Rate	ISO 1133	g/10 min	14	15	25	25	
<b>Electrical</b>	Surface Resistivity	IEC 60093	ohm		>1E15		>1E15	
	Volume Resistivity	IEC 60093	ohm m		1E12		1E12	
	Electric Strength	1.0mm	IEC 60243-1	kV/mm				32
				V/mil				812
	Relative Permittivity	1E2 Hz	IEC 60250			3.5		3.8
		1E6 Hz				3.8		3.8
	Dissipation Factor	1E2 Hz	IEC 60250	E-4				180
1E6 Hz					60		50	
CTI		IEC 60112	V		600		600	



## Delrin® Product Guide Table

				Unreinforced				
Property		Method	Units	Delrin® 511P BK402	Delrin® 511P NC010	Delrin® 900P BK602	Delrin® 900P NC010	
Flammability	Flammability Classification	0.75mm	IEC 60695-11-10	HB	HB	HB	HB	
		0.84mm		HB	HB	HB		
		0.8mm		HB	HB	HB		
	Flammability Classification	1.5mm	UL94	HB	HB	HB	HB	
		3.0mm		HB	HB	HB		
		0.75mm		HB	HB	HB		
Oxygen Index		ISO 4589-1/-2	%	21	22		23	
High Amperage Arc Ignition Resistance	0.75mm	UL 746A	arcs				200	
Hot Wire Ignition	0.75mm	UL 746A	s				8	
	1.5mm						13	
	3.0mm						22	
Temperature Index	RTI, Electrical	0.75mm	UL 746B	C	50	50	50	50
		0.84mm			110	110	110	110
		0.85mm			110	110	110	110
	RTI, Impact	0.75mm	UL 746B	C	50	50	50	50
		0.84mm			85	85	85	85
		0.85mm			90	90	90	90
	RTI, Strength	0.8mm	UL 746B	C	50	50	50	50
		1.5mm			90	90	90	90
		3.0mm			95	95	95	95
Other	Density		ISO 1183	kg/m3 g/cm3	1420 1.42	1420 1.42	1420 1.42	1420 1.42
	Hardness, Rockwell	Scale M	ISO 2039/2			92		92
		Scale R				120		120
	Water Absorption	Equilibrium 50%RH	ISO 62, Similar to	%	0.2	0.2		0.26
		Immersion 24h						0.56
Molding Shrinkage	Saturation, immersed	ISO 294-4	%	1.0	0.9		1.40	
	Normal, 2.0mm			1.7	1.7	1.7	1.9	
	Parallel, 2.0mm			1.7	1.8	1.8	1.9	
Processing	Melt Temperature Range			C	210-220	210-220	210-220	210-220
				F	410-430	410-430	410-430	410-430
	Melt Temperature Optimum			C	215	215	215	215
				F	420	420	420	420
	Mold Temperature Range			C	80-100	80-100	80-100	80-100
				F	175-212	175-210	175-210	175-210
	Mold Temperature Optimum			C	90	90	90	90
				F	195	195	195	195
	Drying Time, Dehumidified Dryer			h	2-4	2-4	2-4	2-4
	Drying Temperature			C	80	80	80	80
			F	175	175	175	175	
Processing Moisture Content			%	<0.2	<0.2	<0.2	<0.2	
Hold Pressure Range				MPa	80-100	80-100	80-100	80-100
				kpsi	12-15	12-15	12-15	12-15

**Delrin® Product Guide Table**

				Toughened			
Property		Method	Units	Delrin® 100ST BK602	Delrin® 100ST NC010	Delrin® 100T BK602	
Resin Identification		ISO 1043		POM-I	POM-HI	POM-I	
Part Marking Code		ISO 11469		>POM-I<	>POM-HI<	>POM-I<	
Mechanical	Yield Stress	ISO 527	MPa kpsi	40 5.8	41 5.9	54 7.8	
	Yield Strain	ISO 527	%	30	30	27	
	Stress at Break	ISO 527	MPa kpsi				
	Strain at Break	ISO 527	%	>100	>100	>50	
	Nominal Strain at Break	ISO 527	%	>50	>50	>50	
	Tensile Modulus	ISO 527	MPa kpsi	1200 175	1400 203	1900 275	
	Tensile Creep Modulus	ISO 899	MPa kpsi		1350 196		
		1000h			550 80		
	Flexural Modulus	ISO 178	MPa kpsi	1100 160	1100 160		
	Flexural Stress	ISO 178	MPa kpsi		34 4.9		
	Notched Charpy Impact Strength	ISO 179/1eA	kJ/m2	14 80	20 90	11 23	
	Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m2		NB NB		
	Thermal	Deflection Temperature	ISO 75-1/-2	C F	102 215	100 212	
			C F	65 150	60 140	71 160	
Melting Temperature		ISO 11357-1/-3	C F	178 352	178 352	178 352	
CLTE, Parallel		-40 - 23°C (-40 - 73°F)	ISO 11359-1/-2	E-4/C	1.2	1.2	
				E-4/F	0.66	0.67	
		23 - 55°C (73 - 130°F)		E-4/C	1.2	1.3	
				E-4/F	0.67	0.72	
		55 - 100°C (130 - 212°F)		E-4/C	1.2	1.3	
				E-4/F	0.66	0.72	
CLTE, Normal		-40 - 23°C (-40 - 73°F)	ISO 11359-1/-2	E-4/C	1.2	1.2	
				E-4/F	0.67	0.67	
		23 - 55°C (73 - 130°F)		E-4/C	1.2	1.4	
				E-4/F	0.67	0.78	
	55 - 100°C (130 - 212°F)	E-4/C		1.3	1.59		
		E-4/F		0.72	0.88		
Vicat Softening Temperature	ISO 306	C F		116 241			
Rheological	Melt Mass-Flow Rate	ISO 1133	g/10 min	2.1	2.0	2.0	
Electrical	Surface Resistivity	IEC 60093	ohm		1E14		
	Volume Resistivity	IEC 60093	ohm m		1E12		
	Electric Strength	IEC 60243-1	kV/mm V/mil		39 990		
	Relative Permittivity	1E2 Hz	IEC 60250			4.4	
		1E6 Hz				3.8	
	Dissipation Factor	1E2 Hz	IEC 60250	E-4		65	
		1E6 Hz					
CTI	IEC 60112	V		600			

**Delrin® Product Guide Table**

				Toughened		
Property		Method	Units	Delrin® 100ST BK602	Delrin® 100ST NC010	Delrin® 100T BK602
Flammability	Flammability Classification	0.75mm 0.84mm 0.8mm 1.5mm 3.0mm	IEC 60695-11-10		HB HB	HB HB
	Flammability Classification	0.75mm 0.84mm 1.5mm 3.0mm	UL94			
	Oxygen Index		ISO 4589-1/-2	%		21
	High Amperage Arc Ignition Resistance	0.75mm	UL 746A	arcs		
	Hot Wire Ignition	0.75mm 1.5mm 3.0mm	UL 746A	s		
Temperature Index	RTI, Electrical	0.75mm	UL 746B	C		
		0.84mm				
	RTI, Impact	0.85mm	UL 746B	C		
		0.8mm				
		1.5mm			85	85
		3.0mm			85	85
RTI, Strength	0.75mm	UL 746B	C			
	0.84mm			85	85	
Other	Density		ISO 1183	kg/m3 g/cm3	1330 1.33	1340 1.34 1.37
	Hardness, Rockwell	Scale M	ISO 2039/2			58
		Scale R			105	
	Water Absorption	Equilibrium 50%RH Immersion 24h Saturation, immersed	ISO 62, Similar to	%		0.35
	Molding Shrinkage	Normal, 2.0mm	ISO 294-4		%	1.4
Parallel, 2.0mm		1.3				1.3
Processing	Melt Temperature Range			C	200-210	200-210
				F	390-410	390-410
	Melt Temperature Optimum			C	205	205
				F	400	400
	Mold Temperature Range			C	40-60	40-60
				F	100-140	100-140
	Mold Temperature Optimum			C	50	50
				F	122	122
Drying Time, Dehumidified Dryer			h	2-4	2-4	
Drying Temperature			C	80	80	
			F	175	175	
Processing Moisture Content			%	<0.05	<0.05	
Hold Pressure Range				MPa	60-80	60-80
				kpsi	9-12	9-12

**Delrin® Product Guide Table**

				Toughened				
Property	Method	Units	Delrin® 100T NC010	Delrin® 500T BK602	Delrin® 500T NC010			
Resin Identification	ISO 1043		POM-I	POM-I	POM-I			
Part Marking Code	ISO 11469		>POM-I<	>POM-I<	>POM-I<			
Mechanical	Yield Stress	ISO 527	MPa kpsi	52 7.5	54 7.8	54 7.8		
	Yield Strain	ISO 527	%	25	17	20		
	Stress at Break	ISO 527	MPa kpsi					
	Strain at Break	ISO 527	%	>50	45	>50		
	Nominal Strain at Break	ISO 527	%	>50	28	35		
	Tensile Modulus	ISO 527	MPa kpsi	1900 276	2200 319	2300 334		
	Tensile Creep Modulus	ISO 899	MPa kpsi			2300 334		
			MPa kpsi			1150 167		
	Flexural Modulus	ISO 178	MPa kpsi	1700 245	2000 290	2100 305		
	Flexural Stress @ 3.5% Strain	ISO 178	MPa kpsi		60 8.7	60 8.7		
	Notched Charpy Impact Strength	ISO 179/1eA	kJ/m2	13 25	7 13	9 14		
	Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m2	NB NB		330 NB		
Thermal	Deflection Temperature	ISO 75-1/-2	C F	130 265	146 295	146 295		
			C F	72 160	76 169	78 172		
	Melting Temperature	ISO 11357-1/-3	C F	178 352	178 352	178 352		
	CLTE, Parallel	ISO 11359-1/-2	E-4/C E-4/F	1.2 0.67			1.1 0.61	
							23 - 55°C (73 - 130°F)	1.3 0.72
							55 - 100°C (130 - 212°F)	1.3 0.72
								1.1 0.61
	CLTE, Normal	ISO 11359-1/-2	E-4/C E-4/F				1.2 0.67	
							23 - 55°C (73 - 130°F)	1.6 0.89
							55 - 100°C (130 - 212°F)	1.6 0.89
								1.39 282
	Vicat Softening Temperature	ISO 306	C F			139 282		
Rheological	Melt Mass-Flow Rate	ISO 1133	g/10 min	2.0	12	12		
Electrical	Surface Resistivity	IEC 60093	ohm			1E15		
	Volume Resistivity	IEC 60093	ohm m			>1E13		
	Electric Strength	IEC 60243-1	kV/mm V/mil					
	Relative Permittivity	IEC 60250		3.1		3.6 3.6		
	Dissipation Factor	IEC 60250	E-4	90		160		
	CTI	IEC 60112	V	600		600		

**Delrin® Product Guide Table**

			Toughened				
Property		Method	Units	Delrin® 100T NC010	Delrin® 500T BK602	Delrin® 500T NC010	
Flammability	Flammability Classification	0.75mm	IEC 60695-11-10	HB	HB	HB	
		0.84mm					
	Flammability Classification	0.8mm	UL94	HB	HB	HB	
		1.5mm					
	Oxygen Index	3.0mm	ISO 4589-1/-2	%			23
	High Amperage Arc Ignition Resistance	0.75mm	UL 746A	arcs		200	200
Hot Wire Ignition	0.75mm	UL 746A	s		8	8	
	1.5mm				11	11	
	3.0mm				15	15	
Temperature Index	RTI, Electrical	0.75mm	UL 746B	C	100	100	
		0.84mm					
		0.85mm					
	RTI, Impact	0.8mm	UL 746B	C	85	85	85
		1.5mm					
		3.0mm					
	RTI, Strength	0.75mm	UL 746B	C	85	85	85
		0.84mm					
		0.85mm					
	0.8mm						
	1.5mm						
	3.0mm						
Other	Density	ISO 1183	kg/m3	1370	1390	1380	
	Hardness, Rockwell	Scale M	ISO 2039/2	g/cm3	1.37	1.39	
		Scale R		59	79		
	Water Absorption	Equilibrium 50%RH	ISO 62, Similar to	%	0.3		0.21
		Immersion 24h			0.9	0.82	
Molding Shrinkage	Saturation, immersed	ISO 294-4	%	1.9	1.5	1.6	
	Normal, 2.0mm			2.1	1.5	1.7	
Processing	Melt Temperature Range		C	200-210	200-210	200-210	
			F	390-410	390-410	390-410	
	Melt Temperature Optimum		C	205	205	205	
			F	400	400	400	
	Mold Temperature Range		C	40-60	40-60	40-60	
			F	100-140	100-140	100-140	
	Mold Temperature Optimum		C	50	50	50	
			F	122	122	122	
	Drying Time, Dehumidified Dryer		h	2-4	2-4	2-4	
	Drying Temperature		C	80	80	80	
		F	175	175	175		
Processing Moisture Content		%	<0.05	<0.05	<0.05		
Hold Pressure Range			MPa	60-80	60-80	60-80	
			kpsi	9-12	9-12	9-12	

## Delrin® Product Guide Table

				UV Stabilized					
Property		Method	Units	Delrin® 127UV BK701	Delrin® 127UV NC010	Delrin® 327UV NC010	Delrin® 527UV BK701	Delrin® 527UV NC010	
Resin Identification		ISO 1043		POM	POM	POM	POM	POM	
Part Marking Code		ISO 11469		>POM<	>POM<	>POM<	>POM<	>POM<	
<b>Mechanical</b>	Yield Stress	ISO 527	MPa kpsi	71.5 10.4	70 10.1	73 11	71 10.3	70 10.2	
	Yield Strain	ISO 527	%	22	23	15	14	17	
	Stress at Break	ISO 527	MPa kpsi						
	Strain at Break	ISO 527	%		65	50	35	40	
	Nominal Strain at Break	ISO 527	%	37	45	35	23	30	
	Tensile Modulus	ISO 527	MPa kpsi	3000 435	2900 420	3200 465	3200 464	3100 450	
	Tensile Creep Modulus	ISO 899	MPa kpsi						
		1000h							
	Flexural Modulus	ISO 178	MPa kpsi	2800 406	2700 390	3000 435	3000 435	3000 435	
	Flexural Stress	ISO 178	MPa kpsi						
		@ 3.5% Strain							
	Notched Charpy Impact Strength	ISO 179/1eA	kJ/m2						
	-30°C (-22°F) 23°C (73°F)		10 13	11 15	8.5 9.5	7 9	8 9		
Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m2							
	-30°C (-22°F) 23°C (73°F)			350 400	290 300		260 260		
<b>Thermal</b>	Deflection	ISO 75-1/-2	C F	162 325	160 320	165 329	163 325	160 320	
	Temperature		C F	92 198	90 195	95 203	92 198	93 200	
	Melting Temperature	ISO 11357-1/-3	C F	178 352	178 352	178 352	178 352	178 352	
		10°C/min							
		-40 - 23°C (-40 - 73°F)		E-4/C E-4/F	1.0 0.56	1.0 0.56	0.90 0.53	0.94 0.52	0.95 0.53
	CLTE, Parallel	ISO 11359-1/-2		E-4/C E-4/F	1.1 0.61	1.2 0.67	1.1 0.61	1.1 0.61	1.1 0.61
		23 - 55°C (73 - 130°F)		E-4/C E-4/F	1.5 0.83	1.6 0.88	1.5 0.81	1.4 0.78	1.7 0.92
		55 - 100°C (130 - 212°F)		E-4/C E-4/F	1.0 0.56	1.0 0.55	1.0 0.53	0.97 0.54	0.94 0.52
		-40 - 23°C (-40 - 73°F)		E-4/C E-4/F	1.1 0.61	1.1 0.61	1.1 0.61	1.1 0.61	1.2 0.67
	CLTE, Normal	ISO 11359-1/-2		E-4/C E-4/F	1.6 0.89	1.7 0.93	1.6 0.88	1.6 0.89	1.8 1.00
		23 - 55°C (73 - 130°F)		E-4/C E-4/F					
		55 - 100°C (130 - 212°F)							
	Vicat Softening Temperature	ISO 306	C F		160 320				160 320
		50N							
<b>Rheological</b>	Melt Mass-Flow Rate	ISO 1133	g/10 min	2.5	2.4	7	15	15	
<b>Electrical</b>	Surface Resistivity	IEC 60093	ohm						
	Volume Resistivity	IEC 60093	ohm m		1E11			1E11	
	Electric Strength	IEC 60243-1	kV/mm V/mil		32 812			32 812	
		1.0mm							
	Relative Permittivity	IEC 60250			3.5 3.4			3.5 3.8	
		1E2 Hz 1E6 Hz							
	Dissipation Factor	IEC 60250	E-4		180 60			180 60	
	1E2 Hz 1E6 Hz								
CTI	IEC 60112	V		600			600		

## Delrin® Product Guide Table

				UV Stabilized					
Property		Method	Units	Delrin® 127UV BK701	Delrin® 127UV NC010	Delrin® 327UV NC010	Delrin® 527UV BK701	Delrin® 527UV NC010	
<b>Flammability</b>	Flammability Classification	0.75mm 0.84mm 0.8mm 1.5mm 3.0mm	IEC 60695-11-10			HB	HB	HB	
	Flammability Classification	0.75mm 0.84mm 1.5mm 3.0mm	UL94				HB	HB	
	Oxygen Index		ISO 4589-1/-2	%		20		22	
	High Amperage Arc Ignition Resistance	0.75mm	UL 746A	arcs					
	Hot Wire Ignition	0.75mm 1.5mm 3.0mm	UL 746A	s					
<b>Temperature Index</b>	RTI, Electrical	0.75mm 0.84mm 0.85mm 0.8mm 1.5mm 3.0mm	UL 746B	C		50	50	50	
	RTI, Impact	0.75mm 0.84mm 0.85mm 0.8mm 1.5mm 3.0mm	UL 746B	C		50	50	50	
	RTI, Strength	0.75mm 0.84mm 0.85mm 0.8mm 1.5mm 3.0mm	UL 746B	C		50	50	50	
<b>Other</b>	Density		ISO 1183	kg/m3 g/cm3	1420 1.42	1420 1.42	1420 1.42	1410 1.41	1420 1.42
	Hardness, Rockwell	Scale M Scale R	ISO 2039/2			92 120			92 120
	Water Absorption	Equilibrium 50%RH Immersion 24h Saturation, immersed	ISO 62, Similar to	%		0.3 0.5 1.2	0.21 0.37		0.17 0.5 1.2
	Molding Shrinkage	Normal, 2.0mm Parallel, 2.0mm	ISO 294-4	%		1.9 2.1	1.8 1.9		1.9 2.0
<b>Processing</b>	Melt Temperature Range			C F	210-220 410-428	210-220 410-430	210-220 410-425	210-220 410-430	210-220 410-430
	Melt Temperature Optimum			C F	215 420	215 420	215 420	215 420	215 420
	Mold Temperature Range			C F	80-100 175-212	80-100 175-210	80-100 175-210	80-100 175-210	80-100 175-210
	Mold Temperature Optimum			C F	90 194	90 195	90 195	90 195	90 195
	Drying Time, Dehumidified Dryer			h	2-4	2-4	2-4	2-4	2-4
	Drying Temperature			C F	80 175	80 175	80 175	80 175	80 175
	Processing Moisture Content			%	<0.2	<0.2	<0.2	<0.2	<0.2
	Hold Pressure Range			MPa kpsi	90-110 13-16	90-110 13-16	80-100 12-15	80-100 12-15	80-100 12-15

**Delrin® Product Guide Table**

				Glass Filled / Reinforced		
Property		Method	Units	Delrin® 510GR NC000	Delrin® 525GR NC000	Delrin® 570 NC000
Resin Identification		ISO 1043		POM-GF10	POM-GF25	POM-GF20
Part Marking Code		ISO 11469		>POM-GF10<	>POM-GF25<	>POM-GF20<
Mechanical	Yield Stress	ISO 527	MPa kpsi			
	Yield Strain	ISO 527	%			
	Stress at Break	ISO 527	MPa kpsi	95 14	145 20.3	55 8.0
	Strain at Break	ISO 527	%	4.3	3	12
	Nominal Strain at Break	ISO 527	%			
	Tensile Modulus	ISO 527	MPa kpsi	5500 800	9400 1360	5000 725
	Tensile Creep Modulus	ISO 899	MPa kpsi			
		1h				
		1000h				
	Flexural Modulus	ISO 178	MPa kpsi	4800 700	8500 1230	4600 667
	Flexural Stress	ISO 178	MPa kpsi			
		@ 3.5% Strain				
	Notched Charpy Impact Strength	ISO 179/1eA	kJ/m2	5 5	8 8	3 4
	-30°C (-22°F) 23°C (73°F)					
Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m2	50 50	50 50	50 54	
	-30°C (-22°F) 23°C (73°F)					
Thermal	Deflection Temperature	ISO 75-1/-2	C F	174 345	176 349	163 325
			C F	164 327	172 342	124 255
	Melting Temperature	ISO 11357-1/-3	C F	178 352	178 352	178 352
	CLTE, Parallel	ISO 11359-1/-2	E-4/C E-4/F	0.7 0.39	0.37 0.20	0.35 0.19
			E-4/C E-4/F		0.14 0.08	
			E-4/C E-4/F		0.86 0.48	
	CLTE, Normal	ISO 11359-1/-2	E-4/C E-4/F	1.0 0.56	1.0 0.56	1.5 0.08
			E-4/C E-4/F			
	Vicat Softening Temperature	ISO 306	C F			
	50N					
Rheological	Melt Mass-Flow Rate	ISO 1133	g/10 min			
	190°C, 2.16kg					
Electrical	Surface Resistivity	IEC 60093	ohm			>1E15
	Volume Resistivity	IEC 60093	ohm m	1E11	1E12	1E13
	Electric Strength	IEC 60243-1	kV/mm V/mil			
	Relative Permittivity	IEC 60250		3.7 3.9	3.7 3.8	3.9 3.9
	Dissipation Factor	IEC 60250	E-4	70		50
	CTI	IEC 60112	V	600		



**Delrin® Product Guide Table**

				Glass Filled / Reinforced			
Property		Method	Units	Delrin® 510GR NC000	Delrin® 525GR NC000	Delrin® 570 NC000	
Flammability	Flammability Classification	0.75mm	IEC 60695-11-10	HB	HB	HB	
		0.84mm					
	Flammability Classification	0.8mm	UL94	HB	HB	HB	
		1.5mm					
		3.0mm					
Oxygen Index		ISO 4589-1/-2	%	21			
High Amperage Arc Ignition Resistance	0.75mm	UL 746A	arcs		150		
Hot Wire Ignition	0.75mm	UL 746A	s		8		
	1.5mm				9		
	3.0mm				11		
Temperature Index	RTI, Electrical	0.75mm	UL 746B	C	50	50	
		0.84mm					
		0.85mm					
	RTI, Impact	0.8mm	UL 746B	C	50	50	105
		1.5mm					85
		3.0mm					85
RTI, Strength	0.75mm	UL 746B	C	50	50	90	
	0.84mm					90	
	0.85mm						
Other	Density	ISO 1183	kg/m3 g/cm3	1490 1.49	1600 1.60	1560 1.56	
	Hardness, Rockwell	Scale M	ISO 2039/2				
		Scale R					
	Water Absorption	Equilibrium 50%RH	ISO 62, Similar to	%	0.16	0.17	0.1
		Immersion 24h Saturation, immersed			1.1	1.26	0.8
Molding Shrinkage	Normal, 2.0mm	ISO 294-4	%	1.4	1.2	1.6	
	Parallel, 2.0mm			1.0	0.4	1.2	
Processing	Melt Temperature Range		C	210-220	210-220	210-220	
			F	410-430	410-430	410-430	
	Melt Temperature Optimum		C	215	215	215	
			F	420	420	420	
	Mold Temperature Range		C	80-100	80-100	80-100	
			F	175-210	175-210	175-210	
	Mold Temperature Optimum		C	90	90	90	
			F	195	195	195	
	Drying Time, Dehumidified Dryer		h	2-4	2-4	2-4	
	Drying Temperature		C	80	80	80	
		F	175	175	175		
Processing Moisture Content		%	<0.1	<0.1			
Hold Pressure Range			MPa	80-100	80-100	80-100	
			kpsi	12-15	12-15	12-15	

## Delrin® Product Guide Table

				Low Wear / Low Friction				
Property		Method	Units	Delrin® 100AL NC010	Delrin® 100KM BK402	Delrin® 100KM NC000	Delrin® 100TL NC010	
Resin Identification		ISO 1043		POM-S	POM-RG	POM-RG	POM-SD	
Part Marking Code		ISO 11469		>POM-S<	>POM-RG<	>POM-RG<	>POM-SD<	
<b>Mechanical</b>	Yield Stress	ISO 527	MPa kpsi	70 10			71 10.3	
	Yield Strain	ISO 527	%	18			25	
	Stress at Break	ISO 527	MPa kpsi		65 9.4	65 9.4		
	Strain at Break	ISO 527	%		15	15		
	Nominal Strain at Break	ISO 527	%	65			33	
	Tensile Modulus	ISO 527	MPa kpsi	3000 435	3200 465	3200 465	3000 435	
	Tensile Creep Modulus	ISO 899	MPa kpsi					
		1000h						
	Flexural Modulus	ISO 178	MPa kpsi	2800 405		3000 435	2800 405	
	Flexural Stress	ISO 178	MPa kpsi					
	Notched Charpy Impact Strength	ISO 179/1eA	kJ/m2	7 9	4 5	3.5 4.5	9	
	Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m2	170 250		60 50	150	
<b>Thermal</b>	Deflection Temperature	ISO 75-1/-2	C F	163 325		160 320	158 315	
			C F	97 205	96 205	98 210	95 205	
	Melting Temperature	ISO 11357-1/-3	C F	178 352	178 352	178 352	178 352	
	CLTE, Parallel	ISO 11359-1/-2	E-4/C E-4/F	1.0 0.56		0.94 0.52	1.0 0.57	
			E-4/C E-4/F	1.1 0.61		1.1 0.61	1.1 0.61	
			E-4/C E-4/F	1.5 0.83		1.4 0.78	1.5 0.84	
	CLTE, Normal	ISO 11359-1/-2	E-4/C E-4/F	1.0 0.56		0.92 0.51	1.0 0.56	
			E-4/C E-4/F	1.1 0.61		1.0 0.56	1.1 0.61	
			E-4/C E-4/F	1.5 0.83		1.4 0.78	1.6 0.88	
	Vicat Softening Temperature	ISO 306	C F					
	<b>Rheological</b>	Melt Mass-Flow Rate	ISO 1133	g/10 min	2.5			2.2
<b>Electrical</b>	Surface Resistivity	IEC 60093	ohm					
	Volume Resistivity	IEC 60093	ohm m					
	Electric Strength	IEC 60243-1	kV/mm V/mil					
	Relative Permittivity	IEC 60250						
	Dissipation Factor	IEC 60250	E-4					
	CTI	IEC 60112	V					

## Delrin® Product Guide Table

				Low Wear / Low Friction				
Property		Method	Units	Delrin® 100AL NC010	Delrin® 100KM BK402	Delrin® 100KM NC000	Delrin® 100TL NC010	
<b>Flammability</b>	Flammability Classification	0.75mm	IEC 60695-11-10	HB				
		0.84mm						
		0.8mm						
	Flammability Classification	1.5mm	UL94	HB				
		3.0mm		HB				
		0.75mm		HB				
Oxygen Index		ISO 4589-1/-2	%					
High Amperage Arc Ignition Resistance	0.75mm	UL 746A	arcs					
Hot Wire Ignition	0.75mm	UL 746A	s					
	1.5mm							
<b>Temperature Index</b>	RTI, Electrical	0.75mm	UL 746B	C	50			
		0.84mm						
		0.85mm						
	RTI, Impact	0.8mm	UL 746B	C	50			
		1.5mm			50			
		3.0mm			50			
	RTI, Strength	0.75mm	UL 746B	C	50			
		0.84mm						
		0.85mm						
<b>Other</b>	Density		ISO 1183	kg/m3 g/cm3	1400 1.40	1410 1.41	1410 1.41	1430 1.43
	Hardness, Rockwell	Scale M Scale R	ISO 2039/2					
	Water Absorption	Equilibrium 50%RH Immersion 24h Saturation, immersed	ISO 62, Similar to	%				
	Molding Shrinkage	Normal, 2.0mm Parallel, 2.0mm	ISO 294-4	%	1.8 2.0		1.5 1.8	1.7 1.8
<b>Processing</b>	Melt Temperature Range			C	210-220	210-220	210-220	210-220
				F	410-430	410-430	410-430	410-430
	Melt Temperature Optimum			C	215	215	215	215
				F	420	420	420	420
	Mold Temperature Range			C	80-100	80-100	80-100	80-100
				F	175-210	175-210	175-210	175-210
	Mold Temperature Optimum			C	90	90	90	90
				F	195	195	195	195
	Drying Time, Dehumidified Dryer				h	2-4	2-4	2-4
Drying Temperature				C	80	80	80	80
				F	175	175	175	175
Processing Moisture Content				%	<0.2	<0.2	<0.2	<0.2
Hold Pressure Range					MPa kpsi	90-110 80-100	80-100 12-15	90-110 13-16

### Delrin® Product Guide Table

				Low Wear / Low Friction				
Property		Method	Units	Delrin® 500AF	Delrin® 500AL NC010	Delrin® 500CL BK601	Delrin® 500CL NC010	
Resin Identification		ISO 1043		POM-SF20	POM-S	POM	POM	
Part Marking Code		ISO 11469		>POM-SF20<	>POM-S<	>POM<	>POM<	
<b>Mechanical</b>	Yield Stress	ISO 527	MPa kpsi		65 9.4	67 9.7	67 9.7	
	Yield Strain	ISO 527	%		11	13	15	
	Stress at Break	ISO 527	MPa kpsi	50 7.3				
	Strain at Break	ISO 527	%	10				
	Nominal Strain at Break	ISO 527	%		35	23	45	
	Tensile Modulus	ISO 527	MPa kpsi	2800 405	3000 435	3200 465	3100 450	
	Tensile Creep Modulus	ISO 899	MPa kpsi					
		1h						
		1000h						
	Flexural Modulus	ISO 178	MPa kpsi	2500 360	2800 406	2900 420	2900 420	
	Flexural Stress @ 3.5% Strain	ISO 178	MPa kpsi					
	Notched Charpy Impact Strength	ISO 179/1eA	kJ/m2	3 3	6 7	8 9	8 9	
Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m2	35 40	140 170		290 350		
<b>Thermal</b>	Deflection Temperature	ISO 75-1/-2	C F	160 320	164 164	160 320	158 315	
			C F	92 195	97 97	90 195	90 194	
	Melting Temperature	ISO 11357-1/-3	C F	178 352	178 352	178 352	178 352	
	CLTE, Parallel	-40 - 23°C (-40 - 73°F)	ISO 11359-1/-2	E-4/C	0.90	1.0		0.92
				E-4/F	0.50	0.56		0.51
		23 - 55°C (73 - 130°F)		E-4/C	1.1	1.2		1.1
				E-4/F	0.61	0.67		0.61
	CLTE, Normal	55 - 100°C (130 - 212°F)	ISO 11359-1/-2	E-4/C	1.4	1.5		1.6
				E-4/F	0.78	0.83		0.89
		-40 - 23°C (-40 - 73°F)		E-4/C	0.9	1.0		1.0
				E-4/F	0.50	0.56		0.56
	CLTE, Normal	23 - 55°C (73 - 130°F)	ISO 11359-1/-2	E-4/C	1.0	1.2		1.1
		E-4/F		0.56	0.67		0.61	
55 - 100°C (130 - 212°F)		E-4/C		1.3	1.7		1.7	
		E-4/F		0.72	0.94		0.94	
Vicat Softening Temperature	ISO 306	C F				159 318		
<b>Rheological</b>	Melt Mass-Flow Rate	ISO 1133	g/10 min		14	15	15	
<b>Electrical</b>	Surface Resistivity	IEC 60093	ohm	>1E15			>1E15	
	Volume Resistivity	IEC 60093	ohm m					
	Electric Strength	IEC 60243-1	kV/mm V/mil					
	Relative Permittivity	IEC 60250		3.1			3.5	
	Dissipation Factor	IEC 60250	E-4	90			60	
	CTI	IEC 60112	V	600		600	600	

### Delrin® Product Guide Table

				Low Wear / Low Friction				
Property		Method	Units	Delrin® 500AF	Delrin® 500AL NC010	Delrin® 500CL BK601	Delrin® 500CL NC010	
Flammability	Flammability Classification	0.75mm	IEC 60695-11-10		HB	HB	HB	
		0.84mm		HB	HB	HB		
	Flammability Classification	0.8mm	UL94		HB	HB	HB	
		1.5mm		HB	HB	HB		
		3.0mm		HB	HB	HB		
		0.75mm						
Oxygen Index	ISO 4589-1/-2	%	23			22		
High Amperage Arc Ignition Resistance	0.75mm	UL 746A	arcs					
Hot Wire Ignition	0.75mm	UL 746A	s					
	1.5mm							
Temperature Index	RTI, Electrical	0.75mm	UL 746B	C		50	50	
		0.84mm			105	110	100	
		0.85mm			105	110	100	
	RTI, Impact	0.8mm	UL 746B	C		50	50	50
		1.5mm			85	85	80	
		3.0mm			85	90	80	
	RTI, Strength	0.75mm	UL 746B	C		50	50	50
		0.84mm			90	90	85	
		0.85mm			90	95	85	
Other	Density	ISO 1183	kg/m3 g/cm3	1530 1.53	1380 1.38		1410 1.41	
	Hardness, Rockwell	Scale M	ISO 2039/2				92	
		Scale R					120	
	Water Absorption	Equilibrium 50%RH	ISO 62, Similar to	%	0.2			0.25
		Immersion 24h			0.35			
	Molding Shrinkage	Saturation, immersed	ISO 294-4	%	1.0			1
Normal, 2.0mm		1.4			1.7		1.8	
	Parallel, 2.0mm			2.0	1.8		1.9	
Processing	Melt Temperature Range		C	210-220	210-220	210-220	210-220	
			F	410-430	410-430	410-430	410-430	
	Melt Temperature Optimum		C	215	215	215	215	
			F	420	420	420	420	
	Mold Temperature Range		C	80-100	80-100	80-100	80-100	
			F	175-210	175-210	175-210	175-210	
	Mold Temperature Optimum		C	90	90	90	90	
			F	195	195	195	195	
	Drying Time, Dehumidified Dryer			h	2-4	2-4	2-4	2-4
	Drying Temperature			C	80	80	80	80
			F	175	175	175	175	
Processing Moisture Content			%	<0.2	<0.1	<0.2	<0.2	
Hold Pressure Range			MPa	80-100	80-100	80-100	80-100	
			kpsi	12-15	12-15	12-15	12-15	

## Delrin® Product Guide Table

				Low Wear / Low Friction				
Property		Method	Units	Delrin® 500MP NC010	Delrin® 500TL NC010	Delrin® 520MP NC010	Delrin® 911AL NC010	
Resin Identification		ISO 1043		POM-SD	POM-SD	POM-SD20	POM-S	
Part Marking Code		ISO 11469		>POM-SD<	>POM-SD<	>POM-SD20<	>POM-S<	
<b>Mechanical</b>	Yield Stress	ISO 527	MPa kpsi	70 10.2	71 10.3	53 7.7	70 10.1	
	Yield Strain	ISO 527	%	12	13	13	9	
	Stress at Break	ISO 527	MPa kpsi					
	Strain at Break	ISO 527	%	20	28			
	Nominal Strain at Break	ISO 527	%	17	20	15	22	
	Tensile Modulus	ISO 527	MPa kpsi	3300 480	3300 479	2800 406	3300 480	
	Tensile Creep Modulus	ISO 899	MPa kpsi					
		1h						
		1000h						
	Flexural Modulus	ISO 178	MPa kpsi	3200 460	3100 450	2700 390	3200 460	
	Flexural Stress @ 3.5% Strain	ISO 178	MPa kpsi					
	Notched Charpy Impact Strength	ISO 179/1eA	kJ/m2	5 5	5 6	4 4	4 5	
Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m2	120 125	160 170	70	130 150		
<b>Thermal</b>	Deflection Temperature	ISO 75-1/-2	C F	162 325	158 315	160 320	162 324	
			C F	100 212	100 210	94 201	103 215	
	Melting Temperature	ISO 11357-1/-3	C F	178 352	178 352	178 352	178 352	
	CLTE, Parallel	-40 - 23°C (-40 - 73°F)	ISO 11359-1/-2	E-4/C	0.90	0.90	0.90	0.90
		23 - 55°C (73 - 130°F)		E-4/F	0.50	0.50	0.50	0.50
				E-4/C	1.0	1.0	0.99	1.0
		55 - 100°C (130 - 212°F)		E-4/F	0.61	0.56	0.55	0.56
	CLTE, Normal	-40 - 23°C (-40 - 73°F)	ISO 11359-1/-2	E-4/C	1.3	1.4	1.4	1.3
		23 - 55°C (73 - 130°F)		E-4/F	0.7	0.8	0.78	0.72
				55 - 100°C (130 - 212°F)	E-4/C	0.9	0.9	0.9
		-40 - 23°C (-40 - 73°F)		E-4/F	0.5	0.5	0.50	0.50
	Vicat Softening Temperature	50N	ISO 306	C F				
			C F					
			C F					
			C F					
<b>Rheological</b>	Melt Mass-Flow Rate	ISO 1133	g/10 min	13	14		25	
<b>Electrical</b>	Surface Resistivity	IEC 60093	ohm					
	Volume Resistivity	IEC 60093	ohm m		1E12			
	Electric Strength	IEC 60243-1	kV/mm V/mil					
	Relative Permittivity	IEC 60250			3.6 3.6			
	Dissipation Factor	IEC 60250	E-4					
	CTI	IEC 60112	V		600			

## Delrin® Product Guide Table

				Low Wear / Low Friction				
Property		Method	Units	Delrin® 500MP NC010	Delrin® 500TL NC010	Delrin® 520MP NC010	Delrin® 911AL NC010	
Flammability	Flammability Classification	0.75mm	IEC 60695-11-10	HB	HB	HB	HB	
		0.84mm					HB	
	Flammability Classification	0.8mm	UL94	HB	HB	HB	HB	
		1.5mm						
		3.0mm						
Oxygen Index		ISO 4589-1/-2	%		18			
High Amperage Arc Ignition Resistance	0.75mm	UL 746A	arcs					
Hot Wire Ignition	0.75mm	UL 746A	s					
	1.5mm							
Temperature Index	RTI, Electrical	0.75mm	UL 746B	C	50	105	105	50
		0.84mm						110
		0.85mm						110
	RTI, Impact	0.8mm	UL 746B	C	50	85	85	85
		1.5mm						90
		3.0mm						90
	RTI, Strength	0.75mm	UL 746B	C	50	90	90	50
		0.84mm						90
		0.85mm						90
Other	Density		ISO 1183	kg/m3 g/cm3	1440 1.44	1410 1.41	1540 1.54	1400 1.4
	Hardness, Rockwell	Scale M	ISO 2039/2					
		Scale R						
	Water Absorption	Equilibrium 50%RH	ISO 62, Similar to	%			0.17 0.33	
Immersion 24h Saturation, immersed								
Molding Shrinkage	Normal, 2.0mm	ISO 294-4	%		1.6 1.9	1.7 1.8	1.5 1.9	1.6 1.6
	Parallel, 2.0mm							
Processing	Melt Temperature Range			C	210-220	210-220	210-220	200-215
				F	410-430	410-430	410-430	390-420
	Melt Temperature Optimum			C	215	215	215	215
				F	420	420	420	420
	Mold Temperature Range			C	80-100	80-100	80-100	60-100
				F	175-210	175-210	175-210	140-210
	Mold Temperature Optimum			C	90	90	90	90
				F	194	195	195	195
	Drying Time, Dehumidified Dryer			h	2-4	2-4	2-4	2-4
	Drying Temperature			C	80	80	80	80
			F	176	175	175	175	
Processing Moisture Content			%	<0.2	<0.2	<0.2	<0.2	
Hold Pressure Range			MPa kpsi	80-100 12-15	80-100 12-15	80-100 12-15	80-100 12-15	

**Delrin® Product Guide Table**

	Property	Method	Units	Extrusion	Low Emissions	
				Delrin® 150 NC010	Delrin® 100PE NC010	Delrin® 500PE NC010
	Resin Identification	ISO 1043		POM	POM	POM
	Part Marking Code	ISO 11469		>POM<	>POM<	>POM<
<b>Mechanical</b>	Yield Stress	ISO 527	MPa kpsi	72 10.4	70 10.2	70 10.1
	Yield Strain	ISO 527	%	21	22	17
	Stress at Break	ISO 527	MPa kpsi			
	Strain at Break	ISO 527	%			
	Nominal Strain at Break	ISO 527	%	40	54	25
	Tensile Modulus	ISO 527	MPa kpsi	3100 450	2900 420	3000 435
	Tensile Creep Modulus	ISO 899	MPa kpsi			
	Flexural Modulus	ISO 178	MPa kpsi	2900 420	2600 377	2900 420
	Flexural Stress	ISO 178	MPa kpsi			
	Notched Charpy Impact Strength	ISO 179/1eA	kJ/m2	9 12	10 14	7 9
	Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m2			
<b>Thermal</b>	Deflection Temperature	ISO 75-1/-2	C F	166 331		
			C F	97 207	100 210	97 205
	Melting Temperature	ISO 11357-1/-3	C F	178 352	178 352	178 352
	CLTE, Parallel	ISO 11359-1/-2	E-4/C E-4/F	1.0 0.56		
			E-4/C E-4/F	1.1 0.61		
			E-4/C E-4/F	1.4 0.78		
	CLTE, Normal	ISO 11359-1/-2	E-4/C E-4/F	0.9 0.5		
			E-4/C E-4/F	1.0 0.56		
			E-4/C E-4/F	1.5 0.83		
	Vicat Softening Temperature	ISO 306	C F			
<b>Rheological</b>	Melt Mass-Flow Rate	ISO 1133	g/10 min	2.4	2.3	15
<b>Electrical</b>	Surface Resistivity	IEC 60093	ohm			
	Volume Resistivity	IEC 60093	ohm m			
	Electric Strength	IEC 60243-1	kV/mm V/mil			
	Relative Permittivity	IEC 60250				
	Dissipation Factor	IEC 60250	E-4			
	CTI	IEC 60112	V			



**Delrin® Product Guide Table**

					Extrusion		Low Emissions	
Property			Method	Units	Delrin® 150 NC010	Delrin® 100PE NC010	Delrin® 500PE NC010	
Flammability	Flammability Classification	0.75mm	IEC 60695-11-10			HB		
		0.84mm						
	Flammability Classification	0.8mm	UL94			HB	HB	
		1.5mm						
		3.0mm						
Oxygen Index		ISO 4589-1/-2	%					
High Amperage Arc Ignition Resistance	0.75mm	UL 746A	arcs					
Hot Wire Ignition	0.75mm	UL 746A	s					
	1.5mm							
	3.0mm							
Temperature Index	RTI, Electrical	0.75mm	UL 746B	C		50	50	
		0.84mm						
		0.85mm						
	RTI, Impact	0.8mm	UL 746B	C		50	50	
		1.5mm						
		3.0mm						
	RTI, Strength	0.75mm	UL 746B	C		50	85	
		0.84mm						
		0.85mm						
Other	Density		ISO 1183	kg/m3 g/cm3	1420 1.42	1420 1.42	1420 1.42	
	Hardness, Rockwell	Scale M	ISO 2039/2					
		Scale R						
	Water Absorption	Equilibrium 50%RH Immersion 24h Saturation, immersed	ISO 62, Similar to	%	0.39			
Molding Shrinkage	Normal, 2.0mm Parallel, 2.0mm	ISO 294-4	%	2.0 1.8		1.9 1.8		
Processing	Melt Temperature Range			C	210-220	200-210	200-210	
				F	410-430	390-410	390-410	
	Melt Temperature Optimum			C	215	205	205	
				F	420	400	400	
	Mold Temperature Range			C	80-100	80-100	80-100	
				F	175-210	175-210	175-210	
	Mold Temperature Optimum			C	90	90	90	
				F	195	195	195	
Drying Time, Dehumidified Dryer			h	2-4	2-4	2-4		
Drying Temperature			C	80	80	80		
			F	175	175	175		
Processing Moisture Content			%	<0.2	<0.2	<0.2		
Hold Pressure Range				MPa	90-110	90-110	80-100	
				kpsi	13-16	13-16	12-15	

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H-76836-1 (11/06) Printed in the U.S.A



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