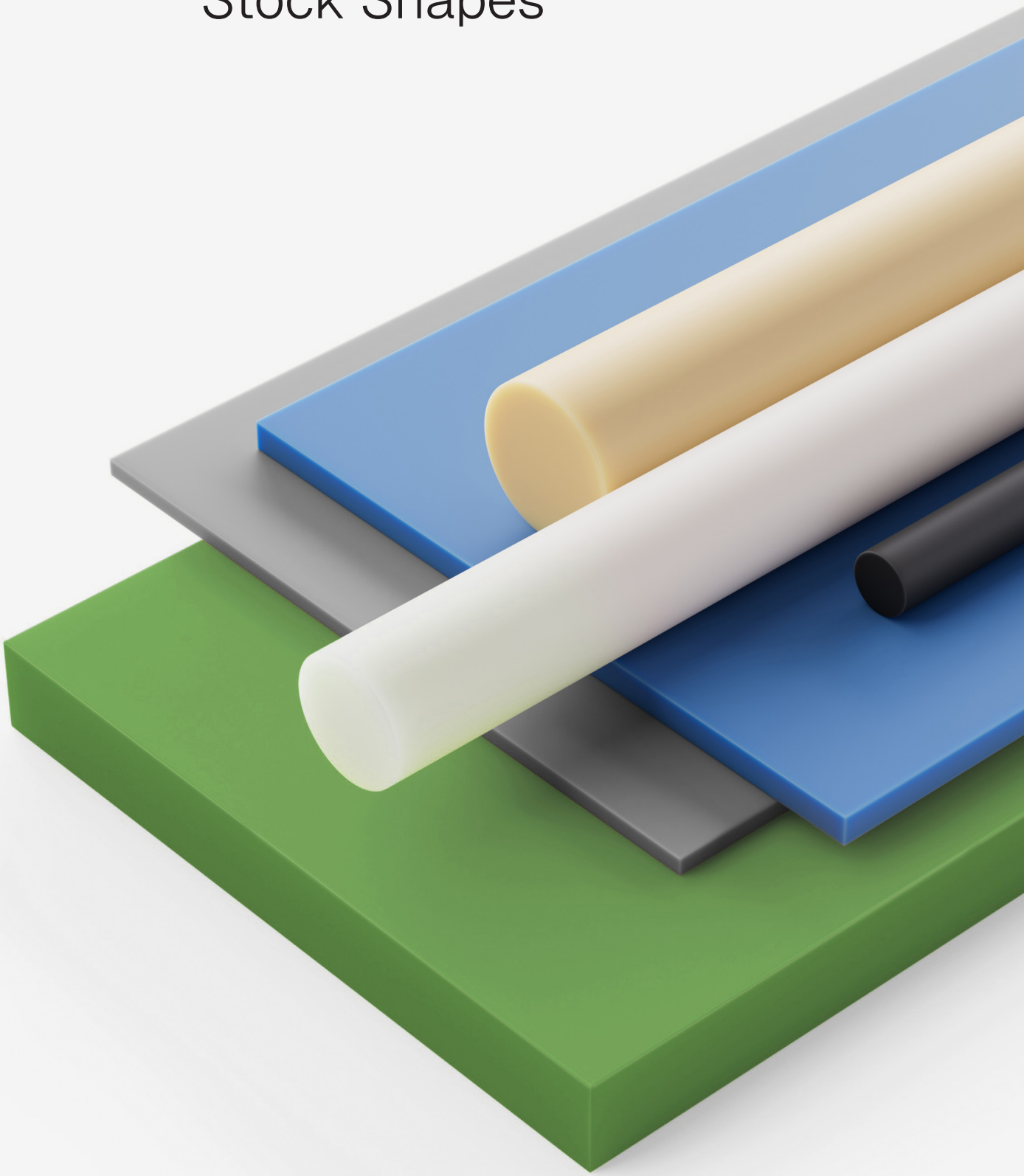
DYNEX USA

Engineering Plastic Stock Shapes



DYNEX USA

Engineering Excellence, Delivered Without Compromise

Dynex USA represents more than just another supplier in the engineered plastics market. We are the bridge between global manufacturing innovation and American industrial excellence. Our mission is simple yet transformative: to empower every distributor, fabricator, and manufacturer with immediate access to premium engineering plastics while preserving their competitive independence.

Uncompromising Quality and Heritage
Drawing from over 60 years of global manufacturing expertise, Dynex USA delivers materials that meet the most demanding specifications across aerospace, medical, semiconductor, and industrial applications. Our ISO 9001-certified processes ensure every product maintains the dimensional stability and performance characteristics your most critical projects demand.

Speed Without Sacrifice
In today's fast-moving manufacturing environment, waiting weeks for materials isn't just inconvenient, it's business-threatening. Our strategic inventory management and same-day shipping capabilities mean your urgent projects never have to wait. We maintain deep stock of essential products in the sizes you need most.

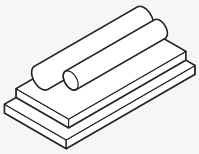
True Partnership Approach
At Dynex USA, we believe in growing together. As your dedicated partner, we focus exclusively on supporting your success and strengthening your market position. Our role is to provide you with the tools and materials you need to serve your customers better, not to compete with you for their business.

Geographic Reach, Local Service
With distribution capabilities across multiple regions and plans for strategic expansion, Dynex USA brings world-class products closer to your operations while maintaining the personal service relationships that drive successful partnerships.

Dynex USA | 50 Halstead Blvd. Suite 16 Zelienople, PA 16063 | TEL. +1 (724) 719-7645 | sales@dynexusa.com | www.dynexusa.com

PEEK

Polyether Ether Ketone



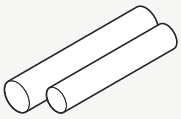
Rods & Plates

PEEK (Polyether Ether Ketone) is a semi-crystalline, high-performance thermoplastic known for its exceptional sliding properties and mechanical strength. It offers outstanding resistance to chemicals, hydrolysis, steam, and radiation. With a continuous service temperature of approximately 480°F, PEEK is well-suited for demanding high-temperature applications while maintaining excellent dimensional and physical stability.

Applications	Characteristics
• Semi-conductor parts	• Excellent thermal properties
• LCD-manufacturing	• Excellent mechanical properties
• Chemical / Electroplating	• Excellent wear / Creep resistance
• Bearing shells	• Excellent chemical resistance
• Piston rings	• Excellent radioactive resistance
• Valve seats	• Non-flammable
• Gears	• High flexural strength
• Seals	• High torsional strength
• Pump vanes	• Very good dielectric properties
• Wafer carriers	• Good radiation resistance
• Friction bearings	• Self-extinguishing
	• Excellent sliding properties

PEEK

Polyether Ether Ketone



Rods

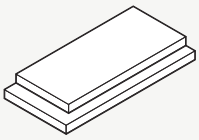
NAT | BLK | CNT-R6

Diameter (inch)	Tolerance (inch)	Weight (lb/pcs) 4ft 1219mm	10ft 3048mm	4ft 1219mm CNT-R6
0.187	+0.00 ~ +0.035	0.070	0.176	0.070
0.250		0.123	0.308	0.123
0.375	+0.00 ~ +0.04	0.278	0.694	0.278
0.500		0.487	1.217	0.487
0.562		0.615	1.537	0.615
0.625		0.760	1.901	0.760
0.750		1.072	2.680	1.072
0.875	+0.00 ~ +0.06	1.459	3.648	1.459
1.000		1.905	4.764	1.905
1.250		2.956	7.391	2.956
1.375		3.577	8.943	3.577
1.500		4.257	10.643	4.257
1.750		5.794	14.487	5.794
2.000		7.567	18.922	7.567
2.250		9.578	23.948	9.578
2.500	+0.00 ~ +0.08	11.824	29.565	11.824
2.750		14.204	35.517	14.204
3.000		16.904	42.268	16.904
3.250		19.839	49.606	19.839
3.500		23.009	57.531	23.009
4.000	+0.00 ~ +0.15	30.052	75.142	30.052
4.500		37.759	94.413	-
4.750		42.071	105.195	-
5.000		46.616	116.559	-
6.000		67.127	167.845	-

• Bespoke sizes available on request.

PEEK

Polyether Ether Ketone



Plates

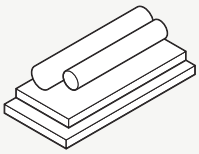
NAT | BLK | CNT-R6

Thickness (inch)	Tolerance (inch)	Weight (lb/pcs) 2ft x 4ft 609×1219mm	
			CNT-R6
0.187	+0.00 ~ +0.05	11.738	11.738
0.200		12.554	12.554
0.250		15.693	15.693
0.375		23.072	23.072
0.500	+0.00 ~ +0.06	30.139	30.139
0.625		37.674	37.674
0.750		44.585	44.585
0.875		52.016	52.016
1.000		59.446	59.446
1.125		66.877	66.877
1.250	+0.00 ~ +0.08	74.308	74.308
1.375		81.739	81.739
1.500		89.169	89.169
1.750		102.576	102.576
2.000		117.230	117.230
2.250		131.884	-
2.500	+0.00 ~ +0.10	146.537	-
2.750		161.191	-

• Bespoke sizes available on request.

Acetal

Polyoxymethylene



Rods & Plates

Acetal (Polyoxymethylene) is a highly crystalline thermoplastic, offering excellent low frictional properties and dimensional stability. In addition its high mechanical strength and toughness coupled with good machinability make it an ideal choice for the production of precision mechanical parts where tight tolerance control is essential. Having a very low moisture absorption, typically (0.08%), it is an ideal material for applications where parts come into contact with chemicals or are exposed to wet conditions.

Applications	Characteristics
• Gears	• High wear resistance
• Guide rollers	• High impact strength and creep resistance
• Bearings	• Excellent dimensional stability
• Bushes	• Good chemical resistance
• Insulators	• Low moisture absorption
• Sliding elements	• FDA compliant
• Pump components	• Suitable for food contact
• Valves and valve bodies	• Good insulating and dielectric properties
• Parts being used in a wet environment	• Very good dielectric properties

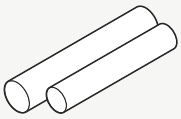
In addition to the standard Acetal materials, DYNEX also manufacture various ‘special grades’ suitable for the most demanding applications within the electrical/electronics industries. These high performance products are manufactured to meet our customer’s extensive engineering needs.

ACETAL-CNT-R6
This grade includes the addition of CNT(Carbon-Nano-Tubes) to the Acetal resin. This unique blend exhibits consistent conductivity ranging between 105Ω and 109Ω with minimal change to the physical properties of the original Acetal material. It can be used in various applications within the semiconductor, LCD/TFT and electronic/electric industries.

Applications
• Insulators
• Transformer housings
• Circuit boards
• Hard disc drives
• Slide pads
• Coil bodies
• Integrated circuits

Acetal

Polyoxymethylene



Rods

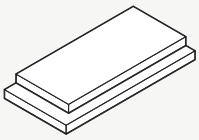
NAT | BLK | BLUE

Diameter (inch)	Tolerance (inch)	Weight (lb) 3ft 914mm	5ft 1524mm	10ft 3048mm
0.187	+0.00 ~ +0.002	-	-	0.19
0.250		-	-	0.34
0.312		-	-	0.52
0.375		-	-	0.74
0.437		-	-	1.01
0.500		-	-	1.33
0.562		-	-	1.64
0.625		-	-	2.03
0.750		-	-	2.89
0.875		-	-	3.93
1.000		-	-	5.14
1.125	+0.00 ~ +0.005	-	-	6.46
1.250		-	-	7.98
1.375		-	-	9.65
1.500		-	-	11.49
1.625		-	-	13.39
1.750		-	-	15.53
1.875		-	-	17.83
2.000		-	-	20.28
2.125	+0.00 ~ +0.070	-	-	22.90
2.250		-	-	25.67
2.375		-	-	28.60
2.500		-	-	31.48
2.750		-	-	38.09
3.000		-	-	45.33
3.250	+0.00 ~ +0.125	-	-	53.20
3.500		-	-	61.70
3.750		-	-	70.83
4.000		-	-	80.59
4.250		-	-	90.98
4.500		-	-	101.99
4.750		-	-	113.64
5.000		-	62.96	125.92
5.500		-	76.18	152.36
6.000		-	90.66	181.32
6.500	+0.00 ~ +0.250	-	106.4	212.80
7.000		74.01	123.4	246.80
8.000		96.66	161.18	322.35
9.000		122.34	203.99	407.97
10.000		151.04	251.84	503.67
11.000		182.75	304.72	609.44
12.000		217.49	362.64	725.29

• Bespoke sizes available on request.

Acetal

Polyoxymethylene



Plates

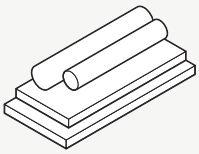
NAT | BLK | BLUE | CNT-R6

Thickness (inch)	Tolerance (inch)	Weight (lb)			
		2ft × 4ft 609×1219mm	4ft × 8ft 1219×2438mm	4ft × 10ft 1219×3048mm	2ft × 4ft 609×1219mm CNT-R6
0.250	+0.000 ~ +0.025	16.32	65.32	81.66	16.32
0.312		20.36	81.52	101.92	20.36
0.375		24.16	96.73	120.93	24.16
0.500		32.22	128.98	161.25	32.22
0.625		40.27	161.22	201.56	40.27
0.750		47.70	190.97	238.75	47.70
0.875		55.65	222.79	278.54	55.65
1.000		63.60	254.62	318.33	63.60
1.250	+0.00 ~ +0.05	79.50	318.28	397.91	79.50
1.500		94.78	379.44	474.37	94.78
1.750		110.58	442.68	553.44	110.58
2.000		126.38	505.92	632.50	126.38
2.250		142.17	569.16	711.56	-
2.500		157.97	632.40	790.62	-
2.750		173.77	695.64	869.69	-
3.000		189.56	758.87	948.75	-
3.250	+0.000 ~ +0.125	205.36	822.11	1027.81	-
3.500		219.70	879.53	1099.59	-
3.750		235.39	942.35	1178.13	-
4.000		251.09	1005.18	1256.68	-
4.500		282.47	1130.82	1413.76	-
5.000		313.86	-	-	-
6.000		376.63	-	-	-

• Bespoke sizes available on request.

Cast Nylon

Polyamide 6 (PA6)



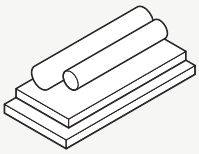
Rods & Plates

Cast Nylon (Polyamide 6) is manufactured by a pressure-less casting process. This is where the raw material, Caprolactam, is polymerized through a series of chemical reactions. Cast Nylon shows higher molecular weight and a higher degree of crystallization than the extruded PA6. It offers high strength, toughness and resistance to wear, impact and fatigue, and good machinability. Since its first introduction in 1950s, Cast Nylon has been widely used for many varied applications within many diverse industries.

Applications	Characteristics
• Bearings	• High mechanical strength
• Wheels	• Good chemical resistance
• Gears	• High wear resistance
• Sprockets	• Good machinability
• Wear pads	• Low coefficient of friction
• Cams	• Light weight
• Rollers	• Diverse grades available to suit particular applications
• Sheaves and pulleys	• Wide range of profiles and sizes available
• Star wheels	• Wide variety of custom cast options
• Timing screws	
• Scrapers	
• Wear strips	

Cast Nylon

Polyamide 6 (PA6)



Rods & Plates

DYNEX manufacture various grades of Cast Nylon, to satisfy their customers' extensive engineering needs. The required properties for many diverse applications can be achieved by the addition of selective additives during the polymerization process.

MC-NATURAL/BLACK
This unmodified grade of Cast Nylon has very low internal stresses due to the production process. High strength, good creep and wear resistance results in very good all round material with the added advantage of good machinability.

MC-MOLY
By the addition of Molybdenum-disulfide to this grade there is a significant improvement to the sliding and frictional properties along with an increase in surface hardness and UV stability. This material is suitable for components requiring high wear and abrasion resistance.

MC-BLUE
The addition of a heat stabilizer to enhance the thermal properties of this grade allows for higher working temperatures to be achieved.

MC-OIL (BLK, GRN, YEL)
This oil filled grade exhibits a significantly lower coefficient of friction and wearing properties compared to the standard MC-Natural/Black. This grade is suitable for wear parts requiring repetitive movements in highspeed applications under low loads.

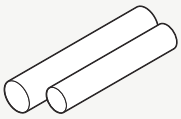
MC-WAX
This premium Wax-filled grade has improved wear properties even in dry running applications due to its low coefficient of friction(0.08). It is ideal for the production of wearing parts requiring repetitive movements in a low speed high load situation.

MC-ESD-R6
This high performance grade is suitable for applications that require good electro-static dissipative properties. With the controlled and uniform inclusion of graphite the electrical conductivity is increased to a range between 105Ω and 109Ω.

MC-ESD-R10
This grade is similar to the MC-ESD-R6, but offers a further enhancement to the electro-static performance. The level of conductivity is increased to a range between 109Ω and 1011Ω.

Cast Nylon

Polyamide 6 (PA6)



Rods

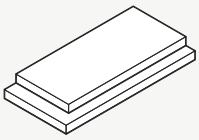
NAT | BLK | MOLY | BLUE | OIL (BLK, GRN, YEL) | WAX

Diameter (inch)	Tolerance (inch)	Weight (lb) 40 inch 1016mm		Weight (lb) 1ft 305mm	
			OIL | WAX		OIL | WAX
2.00	+0.00 ~ +0.15	5.54	6.64	1.66	6.64
2.25		7.01	8.41	2.1	8.41
2.50		8.65	10.38	2.6	10.38
2.75		10.47	12.56	3.14	12.56
3.00	+0.00 ~ +0.25	12.46	14.94	3.74	14.94
3.25		14.62	17.54	4.39	17.54
3.50		16.95	20.34	5.09	20.34
3.75		19.46	23.35	5.84	23.35
4.00		22.14	26.57	6.65	26.57
4.25		25	-	7.5	-
4.50		28.03	-	8.41	-
4.75		31.23	-	9.37	-
5.00		34.6	-	10.39	-
5.25	+0.00 ~ +0.50	38.15	-	11.45	-
5.50		41.86	-	12.57	-
5.75		45.76	-	13.74	-
6.00		49.82	-	14.96	-
6.25		54.06	-	16.23	-
6.50		58.47	-	17.55	-
6.75		63.06	-	18.93	-
7.00		67.81	-	20.36	-
7.50		77.85	-	23.37	-
8.00		88.57	-	26.59	-

• Bespoke sizes available on request.

Cast Nylon

Polyamide 6 (PA6)



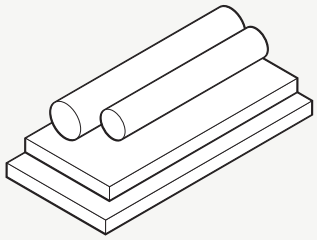
Plates

NAT | BLK | OIL | WAX | MOLY | BLUE
ESD-R6 | ESD-R10

Thickness (inch)	Tolerance (inch)	Weight (lb/pcs) 2×4ft 609×1219mm	4×8ft 1219×2438mm	4×10ft 1219×3048mm	2×4ft 609×1219mm ESD-R6 | ESD-R10
0.250	+0.00 ~ +0.05	14.03	56.17	70.22	14.03
0.312		17.51	70.10	87.63	17.51
0.375	+0.00 ~ +0.08	21.05	84.25	105.33	21.05
0.500		27.44	109.84	137.32	27.44
0.625		33.00	132.10	165.15	33.00
0.750		39.60	158.5	198.18	39.60
0.875		46.20	184.93	231.21	46.20
1.000	+0.00 ~ +0.10	51.96	208.02	260.07	51.96
1.250		64.95	260.03	325.09	64.95
1.500		76.70	307.04	383.87	76.70
1.750		89.48	358.22	447.85	89.48
2.000	+0.00 ~ +0.20	102.26	409.39	511.83	102.26
2.250		115.05	460.57	-	115.05
2.500		127.83	511.74	-	127.83
2.750		139.47	558.34	-	139.47
3.000		150.90	604.10	-	150.90
3.250		163.48	-	-	163.48
3.500		176.05	-	-	176.05
3.750		188.63	-	-	188.63
4.000		201.20	-	-	201.20

• Bespoke sizes available on request.

Physical Properties



(1) Only for short time exposure (a few hours) in applications where no or only a very low load is applied to the material.

(2) Temperature resistance over a period of 5,000/20,000 hours. After these periods of time, there is a decrease in tensile strength of about 50% as compared with the original value. The temperature values given here are thus based on the thermaloxidative degradation which takes place and causes a reduction in properties. Note, however, that, as for all thermoplastics, the maximun allowable service temperature depends in many cases essentially on the duration and the magnitude of the mechanical stresses to which the material is subjected.

(3) Impact strength decreasing with decreasing temperature, the minimum allowable service temperature is practically mainly determined by the extent to which the material is subjected to impact. The values given here are based on unfavourable impact conditions and may consequently not be considered as being the absolute practical limits.

(4) These estimated ratings, derived from raw material supplier data, are not intended to reflect hazards presented by the materials under actual fire conditions. There are no UL-yellow cards available for these stock shapes.

This table is a valuable help in the choice of a material. The data listed here fall within the normal range of product properties. However, they are not guaranteed and they should not be used to establish material specification limits nor used alone as the basis of design.

Properties	Method ASTM	Unit	Cast Nylon							PEEK		ACETAL	
			BLUE	NAT/BLK	MOLY	OIL	WAX	ESD-R6	ESD-R10	NAT/BLK	CNT-R6	NAT/BLK/ BLUE	CNT-R6
Color	-	-	Blue	Ivory/ Black	Gray-Black	Black Green Yellow	Gray	Black	Black	Natural/ Black	Black	White/ Black/Blue	Black
Density	D792	lbs/in³	0.042	0.042	0.042	0.04	0.04	0.043	0.042	0.047	0.047	0.051	0.051
Water absorption													
After 24/96h immersion in water of 73°F	D570	mg	49/93	44/83	52/98	-/-	-/-	-/-	-/-	5/10	-/-	20/37	-/-
	D570	%	0.72/1.37	0.65/1.22	0.76/1.43	0.5/-	0.5/-	-/-	-/-	0.06/0.12	-/-	0.24/0.45	-/-
At saturation in air of 73°F 50%RH	D570	%	2.3	2.2	2.4	-	-	-	-	0.2	-	0.2	-
At saturation in water of 73°F	D570	%	6.6	6.5	6.7	6.3	6.3	-	-	0.45	-	0.85	-
Thermal properties													
Melting temperature	D2133	°F	430	430	430	430	430	440	-	640	-	330	-
Thermal conductivity at 73°F	C177	Btu·in/ ft²·h·°F	2	2	2.1	-	-	-	-	1.7	-	2.1	-
Coefficient of linear thermal expansion													
Average value bt73~140°F	D696	in/in/°F	$44 \cdot 10^{-6}$	$44 \cdot 10^{-6}$	$44 \cdot 10^{-6}$	-	-	-	-	$28 \cdot 10^{-6}$	-	$61 \cdot 10^{-6}$	-
Average value bt73~212°F	D696	in/in/°F	$50 \cdot 10^{-6}$	$50 \cdot 10^{-6}$	$50 \cdot 10^{-6}$	$50 \cdot 10^{-6}$	$50 \cdot 10^{-6}$	$44 \cdot 10^{-6}$	-	$28 \cdot 10^{-6}$	-	$69 \cdot 10^{-6}$	-
Temperature of deflection under load													
Method A : 264psi	D648	°F	355	355	355	240	240	355	-	320	320	220	210
Max. Allowable service temp. in air													
For short periods	-	°F	340	340	340	-	-	-	-	590	-	285	-
Continously : 5,000/20,000h	-	°F	220/195	220/195	220/195	-/-	-/-	-/-	-	480	480	240/210	205
Min. Service temperature	-	°F	-20	-30	-30	-	-	-	-	-	-	-50	-
Flammability													
Ul94 (3/6mm thickness)	-	-	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	V-0/V-0	V-0/V-0	HB/HB	HB/HB
Mechanical properties at 73°F													
Tension test													
Tensile stress	D638	psi	11,750	12,300	11,300	9,850	9,550	11,300	8,700	14,500	14,500	9,450	8,100
Tensile strain at break	D638	%	25	25	25	14	19	4	30	15	15	30	6
Tensile modulus of elasticity	D638	psi	464,000	508,000	479,000	435,000	435,000	609,000	247,000	566,000	580,000	450,000	319,000
Compression test													
Compressive stress at 10% nominal strain	D695	psi	15,000	15,000	14,000	13,500	14,000	-	-	20,000	-	15,000	-
Izod impact strength-notched	D256	ft-lbs/in	0.60	0.60	0.60	0.70	0.70	0.60	1.00	0.80	0.80	0.70	-
Rockwell hardness	D785	-	R118	R118	R118	R110	R110	R119	R98	R120	R120	R115	R115
Electrical properties at 73°F													
Electric strength	D149	V/mil	635	635	610	-	-	-	-	610	-	510	-
Volume resistivity	D257	Ω·cm	$>10^{14}$	$>10^{14}$	$>10^{14}$	$>10^{14}$	$>10^{14}$	10^{6}~10^{10}	10^{10}~10^{12}	$>10^{14}$	10^{6}~10^{10}	$>10^{14}$	10^{6}~10^{10}
Surface resistivity	D257	Ω	$>10^{13}$	$>10^{13}$	$>10^{13}$	$>10^{13}$	$>10^{13}$	10^{2}~10^{9}	10^{9}~10^{11}	$>10^{13}$	$>10^{5}$~10^{9}	$>10^{13}$	10^{5}~10^{9}

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