

# Standard Values of ENSINGER Extruded Engineering Plastics

		Mechanical Properties											Thermal Properties							Electrical Properties				Miscellaneous					
Trade Name	Raw Material Group	Specific Gravity	Density	Tensile Strength, Break	Elongation at Break	Tensile Modulus	Rockwell Hardness	Impact Strength (73°F)	Flexural Strength (notched)	Flexural Modulus	Wear Factor Against Steel	Coefficient of Friction	Melting Point	Heat Deflection at 66 psi	Heat Deflection at 264 psi	Maximum Serving Temperature for short term	Maximum Serving Temperature for Long Term	Thermal Conductivity	Specific Heat	Coefficient of Linear Thermal Expansion	Applicable Temperature Range for Thermal Expansion	Dielectric Constant at 60HZ	Dissipation Factor at 60HZ	Volume Resistivity	Dielectric Strength	Water Absorption - 24 hrs.	Water Absorption - Saturation	Flammability	
		ASTM D 792	ASTM D 792	ASTM D 638	ASTM D 638	ASTM D 638	ASTM D 785	ASTM D 256 (notched)	ASTM D 790	ASTM D 790	40 psi 50 fpm	40 psi 50 fpm	°F	°F	°F	°F	°F	ASTM C 177	Btu/lb-°F	ASTM D 696	°F	ASTM D 150 (73°F, 50% RH)	ASTM D 150 (73°F)	ASTM D 257	ASTM D 149	ASTM D 570	ASTM D 570	UL 94	
		-	lb/in <sup>3</sup>	p.s.i.	%	p.s.i.	-	ft-lb <sup>5</sup> /in	p.s.i.	p.s.i.	in <sup>2</sup> x 1/PC	Dynamic	°F	°F	°F	°F	°F	Btu-in/hr-ft <sup>2</sup> -°F	Btu lb-°F	in/in/°F	°F	-	-	ohm-cm	V/mil	%	%	-	
TECAST™	Cast Nylon 6	1.15	0.0416	12,500	20 - 40	4.0x10 <sup>5</sup>	R118	0.8	13,500	3.3x10 <sup>5</sup>	200x10 <sup>-10</sup>	0.26	428	370	200	300	200	1.67	0.40	4.5x10 <sup>-5</sup>	0 - 120	3.7	0.02	1.0x10 <sup>14</sup>	295	0.6 - 102	5.0 - 6.0	HB	
TECAMID™ 6/6	Nylon 6/6	1.14	0.0412	12,400	90	4.7x10 <sup>5</sup>	R121 M80	1.2	17,000	4.1x10 <sup>5</sup>	200x10 <sup>-10</sup>	0.28	491	410	149	355	210	1.70	0.40	4.5x10 <sup>-5</sup> 5.0x10 <sup>-5</sup>	73 - 170 171 - 250	4.0	0.01	1.0x10 <sup>15</sup>	300 - 400	1.20	8.5	HB	
TECAPET™ PET	PET (Polyethylene Terephthalate)	1.38	0.0499	11,500	70	4.0x10 <sup>5</sup>	R117	0.7	15,000	4.0x10 <sup>5</sup>	210x10 <sup>-10</sup>	0.25	490	240	175	320	230	2.01	0.28	3.9x10 <sup>-5</sup>	50 - 250	3.4	0.002	1.0x10 <sup>16</sup>	400	0.10	0.50	HB	
TECAFORM™	Acetal Copolymer (Polyoxymethylene)	1.41	0.0509	9,800	75	4.3x10 <sup>5</sup>	M80	1.0	13,000	3.7x10 <sup>5</sup>	65x10 <sup>-10</sup>	0.21	330	316	230	285	195	1.60	0.35	6.1x10 <sup>-5</sup>	100 - 220	3.8	0.003	1.0x10 <sup>15</sup>	500	0.20	0.80	HB	
DELTRIN®	Acetal Homopolymer (Polyoxymethylene)	1.42	0.0515	10,000	75	4.5x10 <sup>5</sup>	R120 M94	2.3	14,300	4.2x10 <sup>5</sup>	55x10 <sup>-10</sup>	0.20	347	336	257	300	185	2.60	0.35	6.8x10 <sup>-5</sup> 7.6x10 <sup>-5</sup>	85 - 140 141 - 220	3.7	0.005	1.0x10 <sup>15</sup>	500	0.25	0.90	HB	
TECARAN™ ABS	ABS (Acrylonitrile-Butadiene-Styrene)	1.04	0.0376	5,500	20	3.1x10 <sup>5</sup>	R105	7.5	9,300	3.4x10 <sup>5</sup>	3500x10 <sup>-10</sup>	0.35	220*	230	220	210	160	1.18	0.28	5.2x10 <sup>-5</sup>	0 - 180	3.3	0.02	1.0x10 <sup>15</sup>	450	0.30	0.70	HB	
NORYL®	PPO (Polyphenylene Oxide)	1.08	0.0383	9,600	25	3.5x10 <sup>5</sup>	R119	3.5	14,400	3.7x10 <sup>5</sup>	3000x10 <sup>-10</sup>	0.39	310*	279	254	230	220	1.32	0.30	3.3x10 <sup>-5</sup>	0 - 140	2.7	0.0007	1.0x10 <sup>17</sup>	500	0.07	0.20	V-1 V-0	
TECANAT™	Polycarbonate	1.20	0.0434	9,000	135	3.1x10 <sup>5</sup>	R118 M70	17.0	14,200	3.4x10 <sup>5</sup>	2500x10 <sup>-10</sup>	0.38	310*	280	270	275	240	1.32	0.30	3.8x10 <sup>-5</sup>	0 - 200	3.2	0.001	1.0x10 <sup>17</sup>	380	0.15	0.35	HB	
TECAFINE™ PP	Polypropylene	0.9	0.0330	4,700	100	1.3x10 <sup>5</sup>	R90	0.9	7,000	1.8x10 <sup>5</sup>	-	-	330	-	130	-	-	-	-	5.0x10 <sup>-5</sup>	0 - 100	2.2	-	1.0x10 <sup>17</sup>	-	0.02	-	HB	
TECASON™ S	Polysulfone	1.24	0.045	10,200	50-100	3.6x10 <sup>5</sup>	R120 M69	1.3	15,400	3.9x10 <sup>5</sup>	1500x10 <sup>-10</sup>	0.37	371*	358	345	340	285	1.80	0.31	3.1x10 <sup>-5</sup>	20 - 330	3.1	0.001	5x10 <sup>16</sup>	425	0.30	0.62	V-0	
ULTEM®	Polyetherimide	1.27	0.0459	15,200	60	4.3x10 <sup>5</sup>	M109	1.0	22,000	4.8x10 <sup>5</sup>	4000x10 <sup>-10</sup>	0.17	426*	410	392	380	338	1.53	-	3.1x10 <sup>-5</sup>	0 - 300	3.2	0.001	1.0x10 <sup>17</sup>	830	0.25	1.25	V-0	
TECAPEEK™	Polyetheretherketone	1.32	0.0477	14,000	60	4.9x10 <sup>5</sup>	R126 M99	1.6	24,600	5.9x10 <sup>5</sup>	200x10 <sup>-10</sup>	0.25	644	-	306	600	480	1.73	0.52	2.6x10 <sup>-5</sup> 6.0x10 <sup>-5</sup>	0 - 290 290 - 500	3.2	0.003	4.9x10 <sup>16</sup>	480	0.50	0.50	V-0	
TECATRON™	PPS (Polyphenylene Sulfide)	1.35	0.0488	12,500	4	4.8x10 <sup>5</sup>	M93	0.5	21,000	6.0x10 <sup>5</sup>	540x10 <sup>-10</sup>	0.24	540	400	220	-	220	2.08	-	4.0x10 <sup>-5</sup> 8.0x10 <sup>-5</sup>	-86 - 176 248 - 464	3.0	0.001	1.0x10 <sup>15</sup>	450	0.02	-	V-0	
TECAFLON™ PVDF	PVDF (Polyvinylidene Fluoride)	1.78	0.0643	7,800	35	3.5x10 <sup>5</sup>	R100	3.0	10,750	3.1x10 <sup>5</sup>	1000x10 <sup>-10</sup>	0.24	342	300	235	340	285	1.32	0.23	7.1x10 <sup>-5</sup>	50 - 300	9.0	0.06	5x10 <sup>14</sup>	280	<0.04	0.10	V-0	
SINTIMID® V	Polyimide	1.34	0.0484	20,300	9	-	M120	0.6	29,700	5.8x10 <sup>5</sup>	-	-	-	-	600	626	536	-	-	28x10 <sup>-5</sup>	-	-	-	-	0.62	-	-	-	
TECAFINE™ HDPE	High Density Polyethylene	-	0.0340	4,900	200	-	-	-	-	1.3x10 <sup>5</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

™ Ensinger Industries, Inc.  
 Delrin® - DuPont Company  
 Ultem®, Noryl® - Sabic Innovative Plastics  
 SINTIMID® - Ensinger Industries, Inc.

\* = Vicat softening temperature  
 • = Flammability ratings are dependent on material thickness.

This data was obtained from injection molded samples.

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