

Standard Values of ENSINGER Extruded Engineering Plastics

		Mechanical Properties											Thermal Properties							Electrical Properties				Miscellaneous					
Trade Name	Raw Material Group	Specific Gravity ASTM D 792	Density ASTM D 792	Tensile Strength, Break ASTM D 638	Elongation at Break ASTM D 638	Tensile Modulus ASTM D 638	Rockwell Hardness ASTM D 785	Impact Strength (73°F) ASTM D 256 (notched)	Flexural Strength ASTM D 790	Flexural Modulus ASTM D 790	Wear Factor Against Steel 40 psi 50 fpm	Coefficient of Friction 40 psi 50 fpm	Melting Point	Heat Deflection at 66 psi ASTM D 648	Heat Deflection at 264 psi ASTM D 648	Maximum Serving Temperature for short term	Maximum Serving Temperature for Long Term	Thermal Conductivity ASTM C 177	Specific Heat	Coefficient of Linear Thermal Expansion ASTM D 696	Applicable Temperature Range for Thermal Expansion	Dielectric Constant at 60HZ ASTM D 150 (73°F, 50% RH)	Dissipation Factor at 60HZ ASTM D 150 (73°F)	Volume Resistivity ASTM D 257	Dielectric Strength ASTM D 149	Water Absorption - 24 hrs. ASTM D 570	Water Absorption - Saturation ASTM D 570	Flammability UL 94	
		-	lb in ³	p.s.i.	%	p.s.i.	-	ft-lb5 in	p.s.i.	p.s.i.	in ² x 1 hr. PC	Dynamic	°F	°F	°F	°F	°F	Btu-in hr-ft ² -°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 ⁵	R118	0.8	13,500	3.3x10 ⁵	200x10 ⁻¹⁰	0.26	428	370	200	300	200	1.67	0.40	4.5x10 ⁻⁵	0 - 120	3.7	0.02	1.0x10 ¹⁴	295	0.6 - 102	5.0 - 6.0	HB	
TECAMID™ 6/6	Nylon 6/6	1.14	0.0412	12,400	90	4.7x10 ⁵	R121 M80	1.2	17,000	4.1x10 ⁵	200x10 ⁻¹⁰	0.28	491	410	149	355	210	1.70	0.40	4.5x10 ⁻⁵ 5.0x10 ⁻⁵	73 - 170 171 - 250	4.0	0.01	1.0x10 ¹⁵	300 - 400	1.20	8.5	HB	
TECAPET™ PET	PET (Polyethylene Terephthalate)	1.38	0.0499	11,500	70	4.0x10 ⁵	R117	0.7	15,000	4.0x10 ⁵	210x10 ⁻¹⁰	0.25	490	240	175	320	230	2.01	0.28	3.9x10 ⁻⁵	50 - 250	3.4	0.002	1.0x10 ¹⁶	400	0.10	0.50	HB	
TECAFORM™	Acetal Copolymer (Polyoxymethylene)	1.41	0.0509	9,800	75	4.3x10 ⁵	M80	1.0	13,000	3.7x10 ⁵	65x10 ⁻¹⁰	0.21	330	316	230	285	195	1.60	0.35	6.1x10 ⁻⁵	100 - 220	3.8	0.003	1.0x10 ¹⁵	500	0.20	0.80	HB	
DELTRIN®	Acetal Homopolymer (Polyoxymethylene)	1.42	0.0515	10,000	75	4.5x10 ⁵	R120 M94	2.3	14,300	4.2x10 ⁵	55x10 ⁻¹⁰	0.20	347	336	257	300	185	2.60	0.35	6.8x10 ⁻⁵ 7.6x10 ⁻⁵	85 - 140 141 - 220	3.7	0.005	1.0x10 ¹⁵	500	0.25	0.90	HB	
TECARAN™ ABS	ABS (Acrylonitrile-Butadiene-Styrene)	1.04	0.0376	5,500	20	3.1x10 ⁵	R105	7.5	9,300	3.4x10 ⁵	3500x10 ⁻¹⁰	0.35	220*	230	220	210	160	1.18	0.28	5.2x10 ⁻⁵	0 - 180	3.3	0.02	1.0x10 ¹⁵	450	0.30	0.70	HB	
NORYL®	PPO (Polyphenylene Oxide)	1.08	0.0383	9,600	25	3.5x10 ⁵	R119	3.5	14,400	3.7x10 ⁵	3000x10 ⁻¹⁰	0.39	310*	279	254	230	220	1.32	0.30	3.3x10 ⁻⁵	0 - 140	2.7	0.0007	1.0x10 ¹⁷	500	0.07	0.20	V-1 V-0	
TECANAT™	Polycarbonate	1.20	0.0434	9,000	135	3.1x10 ⁵	R118 M70	17.0	14,200	3.4x10 ⁵	2500x10 ⁻¹⁰	0.38	310*	280	270	275	240	1.32	0.30	3.8x10 ⁻⁵	0 - 200	3.2	0.001	1.0x10 ¹⁷	380	0.15	0.35	HB	
TECAFINE™ PP	Polypropylene	0.9	0.0330	4,700	100	1.3x10 ⁵	R90	0.9	7,000	1.8x10 ⁵	-	-	330	-	130	-	-	-	-	5.0x10 ⁻⁵	0 - 100	2.2	-	1.0x10 ¹⁷	-	0.02	-	HB	
TECASON™ S	Polysulfone	1.24	0.045	10,200	50-100	3.6x10 ⁵	R120 M69	1.3	15,400	3.9x10 ⁵	1500x10 ⁻¹⁰	0.37	371*	358	345	340	285	1.80	0.31	3.1x10 ⁻⁵	20 - 330	3.1	0.001	5x10 ¹⁶	425	0.30	0.62	V-0	
ULTEM®	Polyetherimide	1.27	0.0459	15,200	60	4.3x10 ⁵	M109	1.0	22,000	4.8x10 ⁵	4000x10 ⁻¹⁰	0.17	426*	410	392	380	338	1.53	-	3.1x10 ⁻⁵	0 - 300	3.2	0.001	1.0x10 ¹⁷	830	0.25	1.25	V-0	
TECAPEEK™	Polyetheretherketone	1.32	0.0477	14,000	60	4.9x10 ⁵	R126 M99	1.6	24,600	5.9x10 ⁵	200x10 ⁻¹⁰	0.25	644	-	306	600	480	1.73	0.52	2.6x10 ⁻⁵ 6.0x10 ⁻⁵	0 - 290 290 - 500	3.2	0.003	4.9x10 ¹⁶	480	0.50	0.50	V-0	
TECATRON™	PPS (Polyphenylene Sulfide)	1.35	0.0488	12,500	4	4.8x10 ⁵	M93	0.5	21,000	6.0x10 ⁵	540x10 ⁻¹⁰	0.24	540	400	220	-	220	2.08	-	4.0x10 ⁻⁵ 8.0x10 ⁻⁵	-(-86) - 176 248 - 464	3.0	0.001	1.0x10 ¹⁵	450	0.02	-	V-0	
TECAFLON™ PVDF	PVDF (Polyvinylidene Fluoride)	1.78	0.0643	7,800	35	3.5x10 ⁵	R100	3.0	10,750	3.1x10 ⁵	1000x10 ⁻¹⁰	0.24	342	300	235	340	285	1.32	0.23	7.1x10 ⁻⁵	50 - 300	9.0	0.06	5x10 ¹⁴	280	<0.04	0.10	V-0	
SINTIMID® V	Polyimide	1.34	0.0484	20,300	9	-	M120	0.6	29,700	5.8x10 ⁵	-	-	-	-	600	626	536	-	-	28x10 ⁻⁵	-	-	-	-	0.62	-	-	-	
TECAFINE™ HDPE	High Density Polyethylene	-	0.0340	4,900	200	-	-	-	-	1.3x10 ⁵	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

™ 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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