



# ZEUS<sup>®</sup>

## POLYMER EXTRUSIONS



### CATALOG 11



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## Summary Of Properties

The information presented in this publication is believed to be accurate and is not intended to constitute a specification. Property characteristics are dramatically impacted by geometry and processing method; therefore the properties of extruded parts may vary. This table is only meant to serve as a general guideline; users should evaluate the material to determine the suitability for their own particular application.

<b>PHYSICAL</b>	<b>ASTM</b>	<b>PTFE</b>	<b>FEP</b>	<b>PFA</b>	<b>THV</b>	<b>PVDF</b>	<b>EFEP</b>	<b>ETFE</b>	<b>PEEK</b>
Density (g/cc)	D792	2.16 -2.22	2.12-2.17	2.12-2.17	1.95-2.06	1.76-1.88	1.74	1.7-1.86	1.1-1.48
Water Absorption (%)	D570	0	0.004	<0.03	<0.03	0.01-0.06	0.1 max	0.007	0.1-0.45
Standard Percent Crystallinity (%)		>90	70	48-70	26-29	35-70	10	50	25-35
Refractive Index		1.35	1.33-1.35	1.35	1.3502	1.42	1.338-1.34	1.34	---
Radiation Resistance (MRad)		1	10	1-10	20	1000	---	50	1000
Oxygen Index (%)	D2863	>95	95 min	95 min	65-75	44-80	31	30-46	35
<b>MECHANICAL</b>	<b>ASTM</b>	<b>PTFE</b>	<b>FEP</b>	<b>PFA</b>	<b>THV</b>	<b>PVDF</b>	<b>EFEP</b>	<b>ETFE</b>	<b>PEEK</b>
Hardness, Shore D	D2240	50-65	55-65	55-60	44-58	65-82	75	63-72	>85
Ultimate Tensile Strength (MPa)	D638	20-35	18-34	25-35	20-29	17-48	40-50	37-50	75-97
Elongation at Break (%)	D638	200-550	245-400	250-420	420-600	50-400	420-460	200-550	96-110
Modulus of Elasticity (GPa)	D638	0.39-0.6	0.44-0.64	0.45	0.24	0.5-5	0.490-0.78	0.49-0.78	2.3-4.3
Flexural Modulus (GPa)	D790	0.275-0.7	0.58-0.62	0.6-0.7	0.032-0.52	1.3-7	0.88-1.37	0.7-1.2	3.6-4.1
Coefficient of Friction		0.02-0.2	0.04-0.2	0.04-0.2	0.8	0.14-0.23	0.055-0.078	0.05-0.4	0.34
<b>ELECTRICAL</b>	<b>ASTM</b>	<b>PTFE</b>	<b>FEP</b>	<b>PFA</b>	<b>THV</b>	<b>PVDF</b>	<b>EFEP</b>	<b>ETFE</b>	<b>PEEK</b>
Volume Resistivity ( $\Omega$ -cm)	D257	1e14-1e19	1e17 -1e18	1e18	>1e15	1.5-2e14	1e16	1e17	4.9e16
Dielectric Constant 1MHz	D150	2.1	2-2.1	1.9-2.1	2.4-6.6	7	2.6	2.5-2.6	2.8-2.2
Dielectric Strength (V/mil)	D149	189-610	500-2000	500-2000	1220-1570	800-1700	400	400-1800	500
<b>THERMAL</b>	<b>ASTM</b>	<b>PTFE</b>	<b>FEP</b>	<b>PFA</b>	<b>THV</b>	<b>PVDF</b>	<b>EFEP</b>	<b>ETFE</b>	<b>PEEK</b>
Conductivity (W/m-K)	C117	0.167-0.3	0.19-0.25	0.15-0.25	--	0.17-0.19	0.24	0.24	0.25
Maximum Service Temp, Air ( $^{\circ}$ C)		260	200-205	260	150	100-130	150	150	250-260
Minimum Service Temp, Air ( $^{\circ}$ C)		-200--240	-200--240	-200	-50		---	-100--1890	
Melt Temperature ( $^{\circ}$ C)		327-342	265-275	300-315	120-185	172	160-195	230-280	343
Glass Temperature ( $^{\circ}$ C)		127	80	100	5-36	-30--40	-40-50	40-80	143
Decomposition Temperature ( $^{\circ}$ C)	E1131	400-500	380-430	475	420-440	375-400	350	350-380	540
CTE, linear 20 $^{\circ}$ ( $\mu$ m/m- $^{\circ}$ C)	D696	126-180	100-135	120-140	---	90-144	50-90	50-90	47

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