



















A Summary of Properties


















SUMMARY OF PROPERTIES

DATA FOR PHYSICAL PROPERTIES OF MATERIALS ZEUS PROCESSES

PHYSICAL		ASTM	PTFE	FEP	PFA	THV	PVDF
	Density (g/cc)	D792/ ISO 12086*/ D1505**	2.16 - 2.18	2.12 - 2.17	2.14 - 2.16	1.93 - 2.06*	1.76 - 1.82
	Water Absorption (%)	D570/ISO 62-1*	≤ 0.01	≤ 0.01	< 0.03		0.02 - 0.07
	Refraction Index (N _b)	D542				1.35 - 1.36	1.40 - 1.42
	Oxygen Index (%)	D2863/2868*	≥ 95	≥ 95	≥ 95	> 65	42 - 44*
MECHANICAL							
	Hardness, Shore D	D2240	50 - 65	55 - 56	55 - 60	44 - 59	50 - 80
	Ultimate Tensile Strength (MPa)	D638/ISO 527 (1 or 3)*	21 - 35	19.6 - 34.32	28 - 30	20 - 29*	14 - 55
	Elongation at Break (%)	D638/ISO 527 (1 or 3)*	300 - 500	300 - 400	300	420* - 600*	20 - 800
	Modulus of Elasticity (MPa)	D638/D527*	392	343	451		241 - 2310
	Flexural Modulus (MPa)	D790/ISO 178*	490 - 588	539 - 637	625 - 686	80 - 525	192 - 2310
	Coefficient of Friction	D1894	0.02 - 0.10	0.04 - 0.06	0.04 - 0.06		0.14 - 0.54
ELECTRICAL							
	Volume Resistivity (Ω - cm)	D257/ IEC 60096	≤ 1.0 × 10 ¹⁸	< 1.0 × 10 ¹⁸	≤ 1.0 × 10 ¹⁸		10 ¹⁵ - 2.0 × 10 ¹⁴
	Dielectric Constant 1 MHz	D150/ EIC 60250*/ DIN 53483**	2.10	2.03 - 2.10	2.03 - 2.10	5.72	4.5 - 13.5
	Dielectric Strength (V/mil)	D149/ EIC 60243-1	457 - 483	500 - 2023	508 - 2000	1574.8	254 - 1100
THERMAL							
	Thermal Conductivity (W/m - K)	D433/ ISO 22007-4*/ C177**	0.025** - 0.300	0.250**	.26*		0.144 - 0.2
	Maximum Service Temp, Air (°C)		260	200	260		150
	Melt Temp (°C)	D4591/D3418*/ ISO 12086**/ DOW Method***	326 - 327*	260 - 275	300 - 310	115 - 225*	117 - 172**
	Decomposition Temp (°C)	AIR	505	450	475		375
	Coefficient of Thermal Expansion, linear 20° (μm/m-°C)	D696/ISO 11359*	100	83 - 112	120		80 - 194

SUMMARY OF PROPERTIES

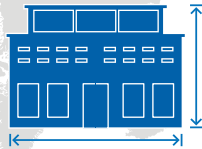
DATA FOR PHYSICAL PROPERTIES OF MATERIALS ZEUS PROCESSES

PHYSICAL		ASTM	EFEP	ETFE	ECTFE	PEEK
	Density (g/cc)	D792/ ISO 12086*/ D1505**	1.71 - 1.77	1.73 - 1.74	1.68	1.3
	Water Absorption (%)	D570/ISO 62-1*	≤ 0.10	< 0.03	< 0.1	0.07* - 0.45*
	Oxygen Index (%)	D2863/2868*	31	32*	52	24
MECHANICAL						
	Hardness, Shore D	D2240	75	67	75	84.5
	Ultimate Tensile Strength (MPa)	D638/ ISO 527 (1 or 3)*	30 - 60	47.99 - 51.99	54	98* - 100*
	Elongation at Break (%)	D638/ ISO 527 (1 or 3)*	370 - 540	382 - 415	250	40* - 45*
	Modulus of Elasticity (MPa)	D638/D527*	490 - 784		1655	3700* - 4000*
	Flexural Modulus (MPa)	D790/ISO 178*	882 - 1372	890 - 960	1690	3800* - 4200*
	Coefficient of Friction	D1894	0.055 - 0.08		0.2	0.58
ELECTRICAL						
	Volume Resistivity (Ω - cm)	D257/ IEC 60096	≤ 10 ¹⁶	> 1.0 × 10 ¹⁷	1.0 × 10 ¹⁶ - 5.5 × 10 ¹⁶	1.0 × 10 ¹⁶
	Dielectric Constant 1 MHz	D150/ EIC 60250*/ DIN 53483**	2.6	2.6	2.57*	3.1**
	Dielectric Strength (V/mil)	D149/ EIC 60243-1	406	1800	350	584.2*
THERMAL						
	Thermal Conductivity (W/m - K)	D433/ ISO 22007-4*/ C177**	0.24**		0.15**	0.29* - 0.32*
	Maximum Service Temp, Air (°C)		150	150	150	260
	Melt Temp (°C)	D4591/D3418*/ ISO 12086**/ DOW Method***	155 - 170**	260 - 265**	242**	343**
	Decomposition Temp (°C)	AIR	357 - 380			541 542.6
	Coefficient of Thermal Expansion, linear 20° (µm/m-°C)	D696/D4702*	50 - 90	131.4	100	45*

About Zeus.



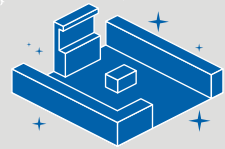
1,500
EMPLOYEES



400,000+ ft²
MANUFACTURING SPACE



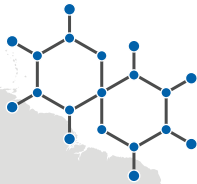
23
CLEAN ROOMS



3,876 ft²
DEVOTED TO
CLEAN ROOMS



50+
SCIENTISTS,
ENGINEERS &
R&D PERSONNEL



5,000 ft²
BIOABSORBABLES
RESEARCH & MFG.



100+
CLASS VI APPROVED
RESINS & PIGMENTS



ZOS
OPERATIONAL
EXCELLENCE



**ISO
CERTIFIED**
ISO 9001
AS 9100
ISO 13485
IATF 16949

- OVER 50 YEARS OF INDUSTRY SOLUTIONS -

Zeus delivers precision polymer solutions that transform businesses, markets, and lives. We have dedicated ourselves to building partnerships, products, and services for the benefit of our customers.

Headquartered in Orangeburg, South Carolina, Zeus employs approximately 1,500 people and operates multiple facilities around the world.



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