

ADVANCED INDUSTRIAL

HIGH PERFORMANCE PLASTIC SHAPES // PRECISION CNC MACHINED COMPONENTS



Categories:	Polymer; Thermoplastic; Polysulfone (PSU)		
Material Notes:	<		
Physical Properties			
	Metric	English	Comments
Specific Gravity	1.24 g/cc	1.24 g/cc	ASTM D792
Water Absorption	0.30 %	0.30 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	0.60 %	0.60 %	Immersion; ASTM D570(2)
Mechanical Properties			
	Metric	English	Comments
Hardness, Rockwell M	82	82	ASTM D785
Hardness, Rockwell R	128	128	ASTM D785
Hardness, Shore D	80	80	ASTM D2240
Tensile Strength	70.3 MPa	10200 psi	ASTM D638
Tensile Strength at 150°C (300°F)	41.4 MPa	6000 psi	ASTM D638
Tensile Strength at 65°C (150°F)	55.2 MPa	8000 psi	ASTM D638
Elongation at Break	30 %	30 %	ASTM D638
Tensile Modulus	2.69 GPa	390 ksi	ASTM D638
Flexural Strength	103 MPa	15000 psi	ASTM D790
Flexural Modulus	2.76 GPa	400 ksi	ASTM D790
Compressive Strength	89.6 MPa	13000 psi	10% Def.; ASTM D695
Compressive Modulus	2.59 GPa	375 ksi	ASTM D695
Shear Strength	62.1 MPa	9000 psi	ASTM D732
Izod Impact, Notched	0.694 J/cm	1.30 ft-lb/in	ASTM D256 Type A
Electrical Properties			
	Metric	English	Comments
Surface Resistivity per Square	$\geq 1.00e+13$ ohm	$\geq 1.00e+13$ ohm	EOS/ESD S11.11
Dielectric Constant	3.14 @Frequency 1e+6 Hz	3.14 @Frequency 1e+6 Hz	ASTM D150
Dielectric Strength	16.7 kV/mm	425 kV/in	Short Term; ASTM D149
Dissipation Factor	0.00080 @Frequency 1e+6 Hz	0.00080 @Frequency 1e+6 Hz	ASTM D150
Thermal Properties			
	Metric	English	Comments
CTE, linear	55.8 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature -40.0 - 149 °C	31.0 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature -40.0 - 300 °F	ASTM E831
Thermal Conductivity	0.259 W/m-K	1.80 BTU-in/hr-ft ² ·°F	ASTM F433
Maximum Service Temperature, Air	149 °C	300 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	171 °C	340 °F	ASTM D648
Glass Transition Temp, Tg	190 °C	374 °F	ASTM D3418
Flammability, UL94	HB @Thickness 3.17 mm	HB @Thickness 0.125 in	Estimated Rating
Compliance Properties			
	Metric	English	Comments
3A-Dairy	Yes	Yes	
Canada AG	No	No	
FDA	Yes	Yes	
NSF	Yes	Yes	STD 61
USDA	Yes	Yes	
USP Class VI	Yes	Yes	
Chemical Resistance Properties			
	Metric	English	Comments
Acids, Strong (pH 1-3)	Unacceptable	Unacceptable	
Acids, Weak	Acceptable	Acceptable	
Alcohols	Acceptable	Acceptable	
Alkalies, Strong (pH 11-14)	Unacceptable	Unacceptable	
Alkalies, Weak	Acceptable	Acceptable	
Chlorinated Solvents	Unacceptable	Unacceptable	
Conductive / Static Dissipative	No	No	
Continuous Sunlight	Limited	Limited	
Hot Water / Steam	Limited	Limited	
Hydrocarbons - Aliphatic	Limited	Limited	

ADVANCED INDUSTRIAL

HIGH PERFORMANCE PLASTIC SHAPES // PRECISION CNC MACHINED COMPONENTS



Hydrocarbons - Aromatic	Unacceptable	Unacceptable
Inorganic Salt Solutions	Acceptable	Acceptable
Ketones, Esters	Unacceptable	Unacceptable

Descriptive Properties

Color	Natural	
Machinability	3	1-10, 1=Easier to Machine