DRAKE® 4200 PAI

High Purity PAI for Semiconductor Manufacturing

DESCRIPTION

DRAKE 4200 PAI rod, plate, and Seamless Tube® meet the quality and performance specifications of shapes previously offered as Torlon 4200 PAI. Drake 4200 PAI is made from Torlon 4000T resin that has been compounded into pellets. It contains no TiO_2, which is considered a potential contaminant in semiconductor manufacturing.

TYPICAL APPLICATIONS:

- Wafer probes, tools, and fixtures
- Plasma chamber hardware
- Reticle pins, electrical components
- Gears and rollers

Material Notes: *Because it does not contain TiO_2, Drake 4200 PAI has a natural dark brown color.*

EXTRUDED SHAPES PROPERTIES

PHYSICAL PROPERTIES	METRIC	IMPERIAL	METHODS
Specific Gravity	1.41 g/cc	0.051 lb/in^3	ASTM D792
Water Absorption	0.4%	0.4%	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	1.7%	1.7%	Immersion; ASTM D570(2)
MECHANICAL PROPERTIES[1]			
Hardness, Rockwell M		M120	ASTM D785
Hardness, Rockwell		E80	ASTM D785
Hardness, Shore D		90	ASTM D2240
Tensile Strength, Ultimate	138 MPa	20,000 PSI	ASTM D638
Elongation at Break	20%	20%	ASTM D638
Tensile Modulus	4136 MPa	600,000 PSI	ASTM D638
Flexural Modulus	4136 MPa	600,000 PSI	ASTM D790
Flexural Yield Strength	165 MPa	24,000 PSI	ASTM D790
Compressive Strength	165 MPa	24,000 PSI	10% Def.; ASTM D695
Compressive Modulus	3926 MPa	478,000 PSI	ASTM D695
Izod Impact (notched)	105 J/m	2.0 ft-lbs/in	ASTM D256 Type A
THERMAL PROPERTIES			
Glass Transition Temp./T_g	275° C	527° F	ASTM D3418
Heat Deflection Temperature (264 PSI)	278° C	532° F	ASTM D638
Coefficient of Linear Thermal Expansion		1.7 x 10^{-5} F^{-1}	ASTM E831

[1]The mechanical properties of extruded shapes may differ from the values published by resin producers. Published resin data is always generated from test specimens injection molded under optimum conditions. Drake's extruded shape values are generated using specimens machined from actual shapes and may reflect surface imperfections from machining, enhanced crystallinity as a result of processing, and fiber alignment inherent in all reinforced plastic shapes, regardless of process. For additional information on the effects of fiber alignment, see Drake Fiber Orientation Diagram, available on the Resource page of our website.