UNITRON® PPS

Polyetheretherketone

Nytef Plastics, Ltd.

Message:

UNITRON PPS (Polyphenylene Sulfide) is a non-reinforced semi-crystalline polymer that offers exceptional strength and stability at elevated temperatures and is unaffected by even the harshest of chemical environments. Most acids, strong bases, fuels and even steam have virtually no affect on the physical properties of this material. While polyphenylene sulfide products have traditionally been know to be brittle, UNITRON PPS machines easily and exhibits excellent toughness. UNITRON PPS's extremely low moisture absorption rate and its low coefficient of thermal expansion contribute to this being one of the most dimensionally stable thermoplastic materials available. UNITRON PPS offers superior electrical properties, is rated UL94, V-0, and is tan in color. Nytef Plastics offers UNITRON PPS stock shapes in a wide range of heavy cross section rod, sheet, and tubular bar sizes.
UNITRON PPS ATTRIBUTES
425°F relative thermal index rating
Excellent strength and rigidity
Extremely low moisture absorption
Superior electrical properties
Flame resistant - UL 94, V-0 rated
Easily machined and fabricated
TYPICAL INDUSTRIES
Pump, valve & compressor mfg.
Medical equipment
Pharmaceutical manufacturing
Aircraft and aerospace
Electrical and electronic products
Semiconductor manufacturing
Petroleum exploration & refining
APPLICATIONS
Compressor vanes
Manifolds and valves
Electrical insulators, connectors and test sockets
Liquid chromatography components
Down hole drill & pump components
CMP clamp rings
Sensor components

General Information	
Features	Flame Retardant
	Good Chemical Resistance
	Good Dimensional Stability
	Good Electrical Properties
	Good Stability
	Good Toughness
	High Rigidity
	High Strength
	Low Moisture Absorption
	Machinable
	Semi Crystalline
Uses	Automotive Applications
	Electrical Parts

	Electrical/Electronic Applications
	Medical Devices
	Medical/Healthcare Applications
	Pharmaceuticals
	Pump Parts
	Semiconductor Molding Compounds
	Valves/Valve Parts

Appearance	Tan
Forms	Preformed Parts
	Rod

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.35	g/cm³	ASTM D792
Water Absorption (24 hr)	0.020	%	ASTM D570
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (M-Scale)	93		ASTM D785
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	3450	MPa	ASTM D638
Tensile Strength (Yield)	86.2	MPa	ASTM D638
Tensile Elongation (Break)	6.0	%	ASTM D638
Flexural Modulus	4140	MPa	ASTM D790
Flexural Strength	145	MPa	ASTM D790
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact	27	J/m	ASTM D256
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (1.8 MPa, Unannealed)	105	°C	ASTM D648
Peak Melting Temperature	282	°C	ASTM D3418
CLTE - Flow	5.4E-5	cm/cm/°C	ASTM D696
RTI Elec	218	°C	UL 746
RTI Imp	218	°C	UL 746
RTI Str	218	°C	UL 746
Electrical	**Nominal Value**	**Unit**	**Test Method**
Volume Resistivity	> 1.0E+16	ohms·cm	ASTM D257
Dielectric Strength [1]	18	kV/mm	ASTM D149
Dielectric Constant (1 MHz)	3.00		ASTM D150
Dissipation Factor (60 Hz)	9.0E-4		ASTM D150
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating (3.18 mm)	V-0		UL 94
NOTE			
1.	Method A (Short-Time)		

Recommended distributors for this material

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