

Mitsubishi Chemical Advanced Materials PPSU Extruded, Barium Sulfate-filled, Polyphenylsulfone (ASTM Product Data Sheet)

Categories: Polymer; Thermoplastic; Polyphenylsulfone (PPSU)

Material Notes: This is a Life Science Grade (LSG) material. The stock shape has been successfully tested and is compliant to both United States Pharmacopeia (USP) and ISO 10993-1 guideline requirements for Biocompatibility Testing of Materials, and they come with certification and full traceability from resin to stock shape. Barium Sulfate-filled PPSU is for medical device applications where x-ray opacity is required. Available in a range of colors and sizes.

Quadrant Engineering Plastic Products is now Mitsubishi Chemical Advanced Materials.

Key Words: R5500 XL LSG

Physical Properties	Metric	English	Comments
Specific Gravity	1.38 g/cc	1.38 g/cc	ASTM D792
Water Absorption	0.37 %	0.37 %	24 hour immersion; ASTM D570
Water Absorption at Saturation	1.1 %	1.1 %	ASTM D570

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	80	80	ASTM D785
Hardness, Rockwell R	120	120	ASTM D785
Hardness, Shore D	80	80	ASTM D2240
Tensile Strength	79.3 MPa	11500 psi	ASTM D638
Tensile Strength at 150°C (300°F)	34.5 MPa	5000 psi	ASTM D638
Tensile Strength at 65°C (150°F)	55.2 MPa	8000 psi	ASTM D638
Elongation at Break	10 %	10 %	ASTM D638
Tensile Modulus	2.34 GPa	340 ksi	ASTM D638
Flexural Strength	93.1 MPa	13500 psi	ASTM D790
Flexural Modulus	2.34 GPa	340 ksi	ASTM D790
Compressive Yield Strength	96.5 MPa	14000 psi	10% deformation; ASTM D695
Compressive Modulus	1.65 GPa	240 ksi	ASTM D695
Izod Impact, Notched	1.33 J/cm	2.50 ft-lb/in	ASTM D256
K (wear) Factor	$\geq 2010 \times 10^{-8} \text{ mm}^3/\text{N}\cdot\text{M}$	$\geq 1000 \times 10^{-10} \text{ in}^3\cdot\text{min}/\text{ft}\cdot\text{lb}\cdot\text{hr}$	QTM 55010

Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	$\geq 1.00\text{e}+14 \text{ ohm}$	$\geq 1.00\text{e}+14 \text{ ohm}$	EOS/ESD S11.11
Dielectric Constant	3.44 @Frequency 1e+6 Hz	3.44 @Frequency 1e+6 Hz	ASTM D150
Dielectric Strength	14.2 kV/mm	360 kV/in	ASTM D149
Dissipation Factor	0.0017 @Frequency 1e+6 Hz	0.0017 @Frequency 1e+6 Hz	ASTM D150

Thermal Properties	Metric	English	Comments
CTE, linear	54.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature -40.0 - 149 °C	30.0 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature -40.0 - 300 °F	ASTM E831
Thermal Conductivity	0.349 W/m-K	2.42 BTU-in/hr-ft ² -°F	
Maximum Service Temperature, Air	171 °C	340 °F	
Deflection Temperature at 1.8 MPa (264 psi)	207 °C	405 °F	ASTM D648
Glass Transition Temp, Tg	220 °C	428 °F	ASTM D3418
Flammability, UL94	V-0 @Thickness 3.10 mm	V-0 @Thickness 0.122 in	

Compliance Properties	Metric	English	Comments
3A-Dairy	No	No	
Canada AG	No	No	
FDA	Yes	Yes	
NSF	No	No	
USDA	No	No	
USP Class VI	Yes	Yes	

Chemical Resistance Properties	Metric	English	Comments
Acids, Strong (pH 1-3)	Limited	Limited	
Acids, Weak	Acceptable	Acceptable	
Alcohols	Limited	Limited	
Alkalies, Strong (pH 11-14)	Acceptable	Acceptable	
Alkalies, Weak	Acceptable	Acceptable	

Chlorinated Solvents	Unacceptable	Unacceptable
Conductive / Static Dissipative	No	No
Continuous Sunlight	Acceptable	Acceptable
Hot Water / Steam	Acceptable	Acceptable
Hydrocarbons - Aliphatic	Acceptable	Acceptable
Hydrocarbons - Aromatic	Limited	Limited
Inorganic Salt Solutions	Acceptable	Acceptable
Ketones, Esters	Unacceptable	Unacceptable

Descriptive Properties

Color		various
-------	--	---------



Email: info@polymershapes.com

Call: 1 (866) 437-7427

www.polymershapes.com