

Mitsubishi Chemical Advanced Materials PPO Polyphenylene oxide, unfilled, extruded (ASTM Product Data Sheet)
Categories: Polymer; Thermoplastic; Polyphenylene Ether/PPO

Material Notes: Quadrant Engineering Plastic Products is now Mitsubishi Chemical Advanced Materials.

Physical Properties	Metric	English	Comments
Specific Gravity	1.08 g/cc	1.08 g/cc	ASTM D792
Water Absorption	0.10 %	0.10 %	Immersion, 24hr; ASTM D570(2)

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	92	92	ASTM D785
Tensile Strength	57.2 MPa	8300 psi	ASTM D638
Tensile Strength at 65°C (150°F)	27.6 MPa	4000 psi	ASTM D638
Elongation at Break	23 %	23 %	ASTM D638
Tensile Modulus	2.53 GPa	367 ksi	ASTM D638
Flexural Strength	88.9 MPa	12900 psi	ASTM D790
Flexural Modulus	2.74 GPa	397 ksi	ASTM D790
Compressive Strength	91.0 MPa	13200 psi	10% Def.; ASTM D695
Compressive Modulus	2.18 GPa	316 ksi	ASTM D695
Shear Strength	57.2 MPa	8300 psi	ASTM D732
Izod Impact, Notched	1.55 J/cm	2.90 ft-lb/in	ASTM D256 Type A

Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	$\geq 1e+13$ ohm	$\geq 1e+13$ ohm	EOS/ESD S11.11
Dielectric Strength	27.6 kV/mm	701 kV/in	Short Term; ASTM D149

Thermal Properties	Metric	English	Comments
CTE, linear	64.1 $\mu\text{m}/\text{m}\cdot\text{°C}$ @Temperature -40.0 - 149 °C	35.6 $\mu\text{in}/\text{in}\cdot\text{°F}$ @Temperature -40.0 - 300 °F	ASTM E831
Maximum Service Temperature, Air	93.3 °C	200 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	127 °C	260 °F	ASTM D648
Glass Transition Temp, Tg	140 °C	284 °F	ASTM D3418
Flammability, UL94	V-1 @Thickness 3.17 mm	V-1 @Thickness 0.125 in	Estimated Rating

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

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

Descriptive Properties			
Color		Black	
Machinability		6	1-10, 1=Easier to Machine