

Polyphenylene Oxide (PPO)

KEY FEATURES

- Low Tendency to Creep
- High Thermostability
- High Impact Strength
- High Resistance to Hydrolysis
- High Dimensional Stability
- Self Extinguishing
- Good Electrical Characteristics Over a Far Frequency Range

DESCRIPTION

Polyphenylene ether (PPO) belongs to the group of the amorphous materials and can be used in temperatures ranging from -58°F to +302°F. PPO exhibits a high impact strength and a very high dimensional stability. The electrical properties will not be influenced by the surrounding frequencies and therefore can be used in a lot of applications in electrical engineering.

TYPICAL PROPERTY VALUES

Physical	Properties	Condition	Units	Value	ASTM Test
	Density		g/cm ³	1.08	D792
	Chemical Designation			PPO	
	Filler				

Mechanical	Properties	Condition	Units	Value	ASTM Test
	Tensile Modulus	@ 73 °F	PSI	350,000	D638
	Tensile Strength	@ 73 °F	PSI	5,100	D638
	Shear Strength	@ 73 °F	PSI		
	Elongation @ Yld	@ 73 °F	%		
	Elongation @ Brk	@ 73 °F	%	15	D638
	Flexural Modulus	@ 73 °F	PSI	270,000	D790
	Flexural Strength	@ 73 °F	PSI	8,000	D790
	Compressive Modulus	@ 73 °F	PSI		
	Compressive Strength	@ 73 °F, 10% strain	PSI		
	Izod (Charpy) Impact Strength	@ 73 °F	ft-lbs/in	3.5	D256
	Rockwell Hardness	@ 73 °F	M (R) Scale	119	D785
	Coefficient of Friction	Static		0.39	D3702
	Coefficient of Friction	Dynamic, 40PSI, 50 FPM		0.32	D3702
	Wear (K) Factor		in ³ -min/ft-lbs-hr		
Limiting PV		psi-fpm			

Thermal	Properties	Condition	Units	Value	ASTM Test
	Heat Deflection Temperature	@ 66 PSI	°F	279	
	Service Temperature	Long Term	°F	220	D696
	Heat Deflection Temperature	@ 264 PSI	°F	254	D648
	Service Temperature	Intermittent	°F	230	
	Thermal Expansion (CLTE)		in/in/°F	3.3*10 ⁻⁵	
	Specific Heat		BTU/lb-°F		
	Thermal Conductivity		BTU-in/hr-ft ² -°F		

Electrical	Properties	Condition	Units	Value	ASTM Test
	Surface Resistivity		ohms/square		D257
	Volume Resistivity		ohm-cm		D149
	Dielectric Constant	50% RH		2.7	D150
	Dielectric Strength	@ 60 Hz, 73 °F	V/mil	500	D257
	Dissipation Factor	@ 60 Hz, 73 °F		0.0007	D150

Other	Properties	Condition	Units	Value	ASTM Test
	Moisture Absorption		%	0.07	D570
	Flammability	UL 94		V-1	D570
	Food Grade			N	
	Relative Cost			\$	

• The data stated above are typical values intended for reference and comparison purposes only.
• The data should not be used as a basis for design specifications or quality control.

• The information is provided as a guide to the best of our knowledge and given without obligation or liability.
• Testing under individual application circumstances is recommended