

Engineering Properties Ryton® R-4 Covers Polyphenylene Sulfide Resins



Ryton® R-4 PPS is a 40% fiberglass reinforced polyphenylene sulfide compound that provides outstanding chemical resistance and mechanical properties even at elevated temperatures.

Nominal Engineering Properties	R-4	Test Method
Tensile Strength, MPa	145	ISO 527
Elongation, %	1.0	ISO 527
Flexural Strength, MPa	200	ISO 178
Flexural Modulus, GPa	14	ISO 178
Notched Izod Impact, kJ/m ²	8.0	ISO 180/A
Unnotched Izod Impact, kJ/m ²	20	ISO 180/U
Compressive Strength, MPa	270	ASTM D695
Tensile Strength, kpsi	22.0	ASTM D638
Elongation, %	1.0	ASTM D638
Flexural Strength, kpsi	29.0	ASTM D790
Flexural Modulus, Mpsi	2.1	ASTM D790
Notched Izod Impact, ft•lb/in, 1/8 in specimen	1.4	ASTM D256
Unnotched Izod Impact, ft•lb/in, 1/8 in specimen	6.5	ASTM D256
Compressive Strength, kpsi	39.0	ASTM D695
Rockwell Hardness	R-122 / M-104	ASTM D785
Poisson's Ratio	0.38	
Heat Deflection Temperature, 264 psi (1.8 MPa), °C	>260	ASTM D648
Heat Deflection Temperature, 264 psi (1.8 MPa), °F	>500	ASTM D648
UL Temperature Index, °C	200 / 220	UL 746B
Coefficient of Linear Thermal Exp., X 10 ⁻⁶ in/in/°C		ASTM E831
Axial Direction, -50°C to 50°C	20	
Axial Direction, 100°C to 200°C	15	
Transverse Direction, -50°C to 50°C	40	
Transverse Direction, 100°C to 200°C	80	
Flammability Rating	V-0 / 5VA	UL 94
Limiting Oxygen Index, %	47	ASTM D2863
Thermal Conductivity, W/m•K	0.32	
Thermal Conductivity, BTU•in/hr•ft ² •°F	2.2	
Dielectric Strength, V/mil	500	ASTM D149
Dielectric Strength, kV/mm	20	ASTM D149
Dielectric Constant, 1 kHz, 25°C (78°F)	3.8	ASTM D150
Dielectric Constant, 1 MHz, 25°C (78°F)	3.8	ASTM D150

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Revision **00**
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Nominal Engineering Properties	R-4	Test Method
Dissipation Factor, 1 kHz, 25°C (78°F)	0.002	ASTM D150
Dissipation Factor, 1 MHz, 25°C (78°F)	0.002	ASTM D150
Volume Resistivity, ohm•cm	1 x 10 ¹⁶	ASTM D257
Surface Resistivity, ohm/sq	1 x 10 ¹⁶	ASTM D257
Arc Resistance, sec	128	ASTM D495
Comparative Tracking Index, V	130	UL 746A
Insulation Resistance, ohm (90°C, 95% RH, 48 hr)	1 x 10 ¹¹	
Mold Shrinkage(2) in/in, Flow/Transverse	0.003 / 0.005	
Density, g/cc	1.68	ASTM D792
Water Absorption, % (23°C, 24 hr)	0.02	ASTM D570
Color	Black	

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