

Physical Properties for Pyroid® HT Pyrolytic Graphite

Property	Direction*	Metric Units	English Units
Density	---	2.26 g/cc	136 lb/ft ³
Yield Strength	XY	38 MPa	5,500 psi
	Z	2.4 MPa	348 psi
Ultimate Tensile Strength	XY	80 MPa	11,600 psi
	Z	3 MPa	435 psi
Flexural Modulus	XY	27 GPa	3.9x10 ⁶ psi
	Z	1.3 GPa	188,500 psi
Young's Modulus	XY	50 GPa	7.25x10 ⁶ psi
	Z	3 GPa	435,000 psi
Shear Modulus	XY	11 MPa	1,600 psi
	Z	7 MPa	1,000 psi
Poisson's Ratio	XY	-0.18	-
	Z	0.20	-
Coefficient Thermal Expansion			
Room Temperature	XY	-4.39 x 10 ⁻⁷ cm/cm°C	-2.49.0x10 ⁻⁷ in/in°F
2000°C	XY	7.48 x10 ⁻⁷ cm/cm°C	4.26 x10 ⁻⁷ in/in°F
Room Temperature	Z	26.4x10 ⁻⁶ cm/cm°C	14.9 x10 ⁻⁶ in/in°F
2000°C	Z	29.8x10 ⁻⁶ cm/cm°C	16.9x10 ⁻⁶ in/in°F
Thermal Conductivity			
Room Temperature	XY	1700 W/m°K	2933 BTU/(hr ft ²)(°F/ft)
1650°C	XY	430 W/m°K	742 BTU/(hr ft ²)(°F/ft)
Room Temperature	Z	7 W/m°K	4.0 BTU/(hr ft ²)(°F/ft)
1650° C	Z	5.3 W/m°K	3.0 BTU/(hr ft ²)(°F/ft)
Electric Resistivity			
Room Temperature	XY	693 μΩcm	
1650°C	XY	277 μΩcm	
Room Temperature	Z	0.6 Ωcm	
1650°C	Z	0.22 Ωcm	
Oxidation Threshold		650°C	1200°F
Permeability		Helium Leak Tight at 10-6 mmHg	
*XY: Along basal planes (across surface) Z: Through basal planes (through thickness)			