Flexible Graphite

TYPICAL GRAFOIL SHEET PROPERTIES

	Properties	English	Metric
TYPICAL MATERIAL PROPERTIES	Density (ASTM F-1315)	70 lb/ft^3	1.12 g/cc
	Leachable Chloride Content-		
	Industrial Grades	<50 ppm	
	Premium (Nuclear) Grades	<20 ppm	
	Sulfur Content –		
	Industrial Grades	550 ppm	
	Premium (Nuclear) Grades	450 ppm	
	Carbon Content –		
	Industrial Grades	98%	
	Premium (Nuclear) Grades	99.9%	
	Compressibility (ASTM F-36)	43%	
	Recovery (ASTM F-36)	15%	
	Creep Relaxation (ASTM F-38)	<5%	
	Sealability (ASTM F-37)	0.017 fluid ounces/hr	0.5 ml/hr
TYPICAL PHYSICAL PROPERTIES	Tensile Strength – (ASTM F-152)		
	Along Length & Width		
	Industrial Grades	650 psi	4.4 MPa
	Premium (Nuclear) Grades	1000 psi	6.9 MPa
	Coefficient of Friction		
	against Steel		
	@ 4 psi (0.03 MPa)	0.018	
	@ 8 psi (0.06 MPa)	0.052	
	@ 12 psi (0.08 MPa)	0.157	
	Compressive Strength		
	Through Thickness (ASTM C-695)	35000 psi	240 MPa
	Modulus of Elasticity	0.2 x 10^6 psi	1380 MPa
	Young's Compressive Modulus		
	Through Thickness	27000 psi	186 MPa
TYPICAL THERMAL PROPERTIES	Functional/Temperature		
	Range		
	Neutral or Reducing		
	Atmosphere	-400 to 5400° F	-240 to 3000° C
	Oxidizing Atmosphere		
	GT^{TM}A Grade	-400 to 850° F**	-240 to 450° C**
	GT^{TM}B, GT^{TM}K, GT^{TM}J Grade	-400 to 975° F**	-240 to 525° C**
	Thermal Conductivity		
	Along Length & Width	960 BTU·in/ft^2·h·F	140 W/m·K
	Through Thickness	36 BTU·in/ft^2·h·F	5 W/m·K
	Thermal Expansion		
	"a" Direction Parallel to Layers		
	70°F-2000°F (21°C-1094°C)	-0.2 x 10^{-6} in/in·F	-0.4 x 10^{-6} m/m·°C
	2000°F-4000°F (1094°C-2206°C)	0.5 x 10^{-6} in/in·F	0.9 x 10^{-6} m/m·°C
	"c" Direction, Through Thickness		
	70°F-4000°F (21°C-2206°C)	15 x 10^{-6} in/in·F	27 x 10^{-6} m/m·°C

	Properties	English	Metric
TYPICAL THERMAL PROPERTIES CONTINUED	Specific Heat at 75° F (24°C)	0.17 Btu/lb·°F	711 J/kg·K
	Heat Storage in a 0.015" layer At 1000° F (538° C)	0.035 Btu/ft2·° F	0.02 cal/cm^2·° F
	Surface Emissivity	0.5	0.5
	Sublimation Point (Does not melt)	6000°F	3300°C
	Thermal Shock Resistance	Excellent	Excellent