

Graphite Sheets (PERMA-FOIL®)

Typical properties

Item	Unit	Grade						
		PF	PF-R2	PF-HP	PF-G3	PF-UHPL	PF-UHP	PF-UHPU
Operation temperature	°C	-200 to 3200						
Thickness	mm	0.2/0.40/ 0.6/1.0	0.2/0.38/ 0.76/1.5	0.1/0.38/ 0.6/1.0	0.25/0.38/ 0.75/1.0	0.38	0.38/0.6/ 1.0/1.5	0.42/0.66/ 1.1/1.65
Bulk density	Mg/m ³	0.5 to 1.1	0.5 to 1.1	0.5 to 2.0	0.5 to 1.1	1.0	1.0	0.9
Oxidation loss	mass %	40	25	40	3	5	5	5
Initial oxidation temperature	°C	440	730	630	850	820	820	820
Tensile strength	MPa	4.9	5.2	4.9	5.1	6.3	6.3	6.3
Sulfur content	mass ppm	1000	1000	1000	1000	< 1	< 1	< 1
Chlorine content	mass ppm	< 10	< 10	< 10	< 10	< 3	< 3	< 3
Compression rate	%	47						
Recovery rate	%	15						
Stress release rate	%	4.0						
Ash content	mass %	0.5	0.5	0.1	0.5	< 20 mass ppm	< 10 mass ppm	< 10 mass ppm
pH	-	5.1	5.1	5.1	5.1	7.0	7.0	7.0
Gas permeability rate (Nitrogen, 0.1MPa Differential pressure)	m ² /s	1.3 X 10 ⁻¹⁰						
Coefficient of thermal expansion	Parallel to surface	1/K	5 X 10 ⁻⁶					
	Perpendicular to surface		2 X 10 ⁻⁴					
Thermal conductivity (25°C)	Parallel to surface	W/(m·K)	200					
	Perpendicular to surface		5					
Electrical resistivity (25°C)	Parallel to surface	μΩ·m	7					
	Perpendicular to surface		1,000					
Flammability	-	Equivalent to UL94 V-0						

*The figures above are typical values, and are not guaranteed.

*Property data with the density of 1.0Mg/m³.

*Oxidation loss is the measurement for 1 hour at 670°C.

*Initial oxidation temperature represents the kick-off temperature of mass decrease by the result of measurement using a thermobalance in the air atmosphere.

*The measurement temperature range for the coefficient of thermal expansion is 300 to 400°C.

*The thicknesses and densities shown above are standard sizes. Please contact our sales department regarding other sizes.

*There are constraints of size depending on the size, thickness and bulk density.

*There are standard size for each grade, thickness or bulk density.

*Before actually using one of our products, please be sure to contact our sales department to consult on selecting the most appropriate grade.