

XTE80 Fine Grain Graphite

Technical Data Sheet 6004

Product Overview

GRAFSTAR XTE80 ultra fine grain graphite is suitable for a broad range of applications that require fine machined detail and superior wear resistance in a variety of service conditions.

Applications

- Semiconductor wafer processing boats/carriers
- Ion implant beam line parts
- Electron beam evaporation crucibles/liners
- Plasma etch electrodes
- Substrate for SiC coated artifacts
- Hot press dies

Sizes

- 152 x 305 x 635 mm (6" x 12" x 25") billets

Typical Properties at Room Temperature*

Characteristic	Unit	Value	Unit	Value
Particle Size	inches	<0.00016	µm	<4
Bulk Density	lbs/ft ³	113	g/cm ³	1.81
Specific Resistance	10 ⁻⁴ Ωin	6.26	µΩm	15.9
Thermal Conductivity	Btu/ft-hr-°F	48	W/m°K	83
CTE (to 100°C)	10 ⁻⁶ /°F	2.7	10 ⁻⁶ /°C	4.9
Flexural Strength (4-Point)	psi	10,300	MPa	71
Compressive Strength	psi	23,500	MPa	162
Tensile Strength	psi	8,700	MPa	60
Sonic Modulus	10 ⁶ psi	1.9	GPa	12.8
Hardness	Shore	76	Rockwell "L"	115
Purity (Ash)**	ppm	1600	ppm	1600
Gas Permeability	Darcy	0.0008	Darcy	0.0008

Notes:

* Properties listed are typical and cannot be used as accept/reject specifications

** For applications requiring low ash, a purified version of this grade is available

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Redefining limits