

Tokai Carbon – CFC Product

Tokarec

TOKAREC has a high thermal conductivity, a low coefficient of thermal expansion and high strength to weight ratio, which makes it an ideal material for high temperature applications.

Originally developed for high performance space vehicles, TOKAREC has some unique properties that make it suitable for use in a wide variety of industries. TOKAREC parts are found in vacuum furnaces, chemical reactors, silicon wafer processes and a host of other industrial applications. In particular, furnace charging systems made in TOKAREC, not metal, reduce the size of the fixtures which, in turn, leads to increases in productivity. The high strength gives added protection to areas of the furnace vulnerable to mechanical wear while the low expansion rate means low deformation of parts during heating and cooling.

The material has:

High Specific Strength and High Specific Modulus

Low Coefficient of Thermal Expansion

Low Thermal Conductivity

High Purity

Low Strength to Weight Ratio

Excellent Heat and Thermal Shock Resistance

Applications for this type of product:

Components for single and multi-Crystal Pullers

Heaters

Jigs and Fixtures

Carriers for Silicon Solar Cells

Structural Furnace Parts

Property	Unit	CC26NF	CC27MFP	CC28MF	CC28NF
		6K Cylinder	12K Crucible	12K Plates	6K Plates
Apparent Density	g/cm ³	1.4	1.62	1.48	1.48
Flexural Strength (//)	MPa	100	170	110	140
Tensile Strength (//)	MPa	100	150	100	100
C.T.E.(450°C) (//)	×10 ⁻⁶ /K	0.8	0.8	0.8	0.8
Thermal Conductivity (⊥)	W/mK	2.6	8	2.8	2.8
Specific Resistance (//)	μΩm	28	22	26	26

Typical Impurity Analysis (ppm)

Al	Ca	Cr	Cu	Fe	Ti	V	Ni
0.5	<0.04	<0.07	<0.08	0.3	<0.09	<0.07	<0.1