

HTC Graphite

Thermal management material

Entegris' POCO materials are specifically designed for applications that require high-thermal performance. A unique manufacturing process yields a lightweight, porous graphite that has high thermal conductivity and very efficient thermal energy transfer characteristics. Thermal management applications for our HTC graphite include heat sinks, heat exchangers, heat pipes, evaporative coolers, and phase-change cooling systems. HTC graphite can be laminated into thermal structures for satellite thermal panels and avionics enclosures. As the base material for a thermal composite, the open porosity of HTC graphite allows it to be filled with other materials such as copper, polymer, or additional carbon.

The versatility of this porous graphite makes it desirable for a number of industries that currently use nonconductive carbon, aluminum foam, copper, or other metals. These markets include electronics, aerospace, ground vehicles, medical, electrochemical (fuel cells, batteries), and general industrial.

FEATURES & BENEFITS

- High specific thermal conductivity — 272 W/m•K/g/cc
- Wetted by liquid nitrogen, methanol, Fluorinert™
- RF shielding capability — RF energy is not transmitted through the material
- Chemical inertness — highly graphitic structure makes it inert to most acids and organic solvents

TYPICAL MATERIAL PROPERTIES

AVERAGE			
Density	0.9 g/cc		
Compressive strength	855 psi		
Thermal conductivity	Out of plane	245 W/m•K	
	In plane	70 W/m•K	
Total porosity	61%		
Open porosity (% of total)	95%		
Pore diameter	400 microns		
	TEMPERATURE RANGE	IN PLANE AVERAGE	OUT OF PLANE AVERAGE
Coefficient of thermal expansion*	323 to 423 K 50 to 150°C	1.02	-1.07
	423 to 573 K 150 to 300°C	1.91	-0.02
	573 to 873 K 300 to 600°C	2.64	0.73
	873 to 1073 K 600 to 800°C	3.26	1.31

*Values in ppm/K or ppm/°C

FOR MORE INFORMATION

Please call your local distributor to learn what our premium graphite solutions can do for you. Visit poco.entegris.com/distributors for the location nearest you.

TERMS AND CONDITIONS OF SALE

All purchases are subject to Poco Graphite's Terms and Conditions of Sale. To view and print this information, visit poco.entegris.com/terms-and-conditions.



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