

# Boron Carbide

## Property Comparison\*

<i>Property</i>	<i>Ceralloy® 546</i>	<i>Ceralloy® 546-4E</i>
<i>Process</i>	Hot Press	Hot Press
<i>Purity</i>	>98.5%	99.5%
<i>Color</i>	Black	Black
<i>Density (g/cc)</i>	2.50	2.50
<i>Grain Size μm</i>	15	15
<i>Mechanical</i>		
Flexural Strength (MPa) @ RT	410	410
Weibull Modulus	12	12
Elastic Modulus (GPa)	460	460
Poisson's Ratio	0.17	0.17
Hardness (Kg/mm <sup>2</sup> )	3200	3200
Fracture Toughness (MPa•m <sup>1/2</sup> )	2.5	2.5
<i>Thermal</i>		
Thermal Expansion Coeff. 10 <sup>-6</sup> /°C; (RT – 1000 °C)	5.6	5.6
Thermal Conductivity (W/mK) @ 25 °C	90	90
<i>Electrical</i>		
Electrical Resistivity (ohm-cm)	10 <sup>1</sup>	10 <sup>1</sup>
<i>Applications</i>	Ballistic Armor, Sputtering Targets, Semiconductor Components, Wear Components, Nuclear Shielding	Sputtering Targets, Semiconductor Components, Wear Components, Nuclear Shielding
<i>Key Features</i>	Hardness, Lightweight, Wear Resistance, Neutron Absorption	Hardness, Lightweight, Wear Resistance, Neutron Absorption

\* Property values are typical and should not be considered specifications.

