U.S. ELECTROFUSED MINERALS, INC.

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Updated - 05.2013

BORON CARBIDE (B_4C)

High Purity Boron Carbide

Boron Carbide (B4C) is one of the hardest man made materials availabe. Above 1300°C it is even harder than diamond and cubic boron nitride. It has a 4-point flexural strength of 50,000-70,000 psi and compressive strength of 414,000 psi, depending on density. Boron Carbide also has a low thermal conductivity (29-67 W/mK) and has electrical resistivity from 0.1-10 ohm-cm.

With its strength to weight ratio and low thermal conductivity, Boron Carbide is ideal for a wide variety of applications including blasting nozzles, body armor, ceramic & metal-matrix composites, aerospace applications, refractory anti-oxidant, lapping, honing stones, nuclear technology, ultrasonic machining, and many others.

Typical Physical Properties

Crystal Structure	Rhombohedral
Hardness	Knoop: 2800/ Mohs: 9.6
Specifc Gravity	2.52 g/cc
Density	2.45 c/cc
Specific Gravity	2.52 g/cc
Surface Area	11.45 - 12.15 m²/g
Median Particle Size	0.676 microns

Typical Chemical Analysis (%)

B to C Ratio	Total B+C	Boron	Carbon
3.6 - 3.9	98.3	76.5	21.8

Iron	Oxygen	Nitrogen
1146 ppm	2.01	0.24