Boron Carbide

Grade B4C-S-WSP

Background

Boron Carbide is a high performance abrasive material with chemical and physical properties similar to diamonds, such as, chemical resistance and hardness. Boron carbide's extra hardness gives it the nickname "Black Diamond" (It ranks third after diamond and boron nitride) and is one of the leading grinding materials.

Application Specifics

• **Wire saw slicing:**
our **B4C-SWS** boron carbide powder specifically developed to deliver the optimum performance and excellent process control in wire saw slicing of the Sapphire products. Starting with chemistry of the raw materials and continue through every manufacturing step: furnacing, crushing, chemical cleansing, crushing (with grain shaping emphasis), and multi-stage grading process every effort is made to insure proper powder performance.

Technical data

• Appearance (dry state):	Color	Black
• Chemical composition:	Chemical formula:	
	Grade	Abrasive
	B + C min.	98
	B (Boron) min.	74
	C (Carbon) max.	24
	B_2O_3	0.50
	Fe (Iron) max.	0.2
	Si (Silicon)	---
	N (Nitrogen)	---
• Physical data:		
	Knoop hardness (0.1)	3000
	Mohs hardness	< 9.5 *Note: Diamond's Mohs hardness is 10*
	Specific gravity:	2.51
	Melting point:	2723 °F
	Structure:	Monocrystalline

Other sizes in FEPA and USA Mesh System are available on request.
Standard packaging in 100 lb (30 gal.) fiber drums Custom packaging is available on request.

Standard Products for Wire Saw Slicing & Lapping Applications

Our standard Nuclear Grade powders for various applications are shown below:

UKA Grade Typical FEPA Grade Typical Application
B4C-SWS F360 (40/12 mkm) or F400 (32/8 mkm), Wire saw slicing
B4C-SP F400 (32/8 mkm), Lapping

Notes: 1. Customized powder sizing is available on request.
2. Standard packaging in 100 lb (30 gal.) fiber drums. Custom packaging is available on request.

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