

Norbide® Hot Pressed Boron Carbide



Technical Data

Product Description

Norbide® Hot Pressed Boron Carbide (B_4C) is one of the hardest materials known and offers excellent chemical and wear resistance for demanding applications such as blast nozzles, monument nozzles and armor components. Components made with Norbide® B_4C offer longer service life which can translate into lower costs, reduced maintenance and less downtime for many applications.

Applications

- Abrasives for polishing and lapping
- Dressing/forming sticks
- Wear resistant components
- Ballistic armor tiles
- pumping, water jet cutters, etc
- Nozzles for grit blasting slurry

Material Characteristics

- Extreme hardness for wear and abrasion resistance
- High elastic modulus
- Non-porous surface won't react with lubricants and other chemicals
- Good electrical resistivity
- Near theoretical density for longer life

Norbide® Hot Pressed B_4C Typical Physical Properties

Property	Units	Value
Composition*		B•C
Density	gm/cm ³	2.50
Hardness (Knoop)**	kg/mm ²	2800
Flexural Strength 4pt @ RT***	MPa	425
Compressive Strength @ RT	MPa	2900
Modulus of Elasticity @ RT	GPa	440
Poisson's Ratio		0.18
Fracture Toughness @ RT Indentation	MPa x m ^{1/2}	3.1
Coefficient of Thermal Expansion	x10 ⁻⁶ mm/mmK	5
Thermal Conductivity @20°C	W/mK	90

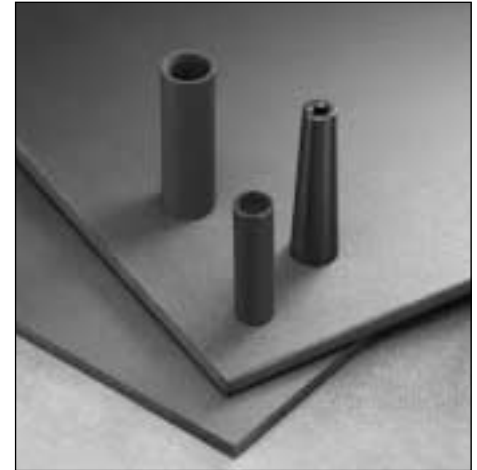
*Composition code: B = boron; C = free graphite; B_4C = boron carbide

**Knoop 0.1 kg load

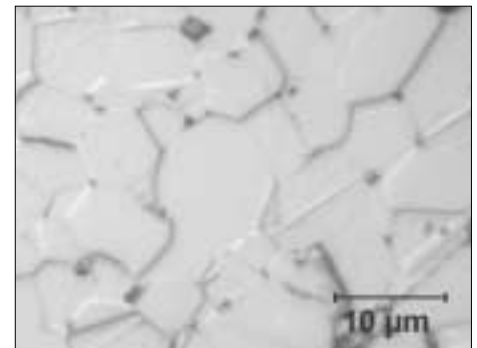
***Test Bar Size: 3 x 4 x 45mm (0.118" x 0.157" x 1.772")

Saint-Gobain Ceramics application engineers can assist you with the design of cost-effective high performance components for your specific need.

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Norbide® Hot Pressed Boron Carbide



Norbide® Boron Carbide micrograph

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