

# Boron carbide B<sub>4</sub>C

## 1. General:

Boron carbide is a non-oxide ceramic that is characterized by particular hardness and toughness. Boron carbide ceramics are very wear resistant. With a hardness of 9.3 on the Mohs scale, it is one of the hardest materials known, behind cubic boron nitride and diamond.

## 2. Material Properties

Chemical symbol:	B <sub>4</sub> C
Atomic weight:	55,25
Density:	2,52 g/cm <sup>3</sup>
Melting point:	2350 °C
Heat capacity:	950 J kg <sup>-1</sup> K <sup>-1</sup>
Thermal conductivity:	17-42 W m <sup>-1</sup> K <sup>-1</sup>
Young Modulus:	450-470 GPa

## 3. Standard Tolerances:

Diameter:	+/- 0,1 mm
Thickness:	+/- 0,1 mm
Wedge:	< 3 arc min

## 4. Delivery forms

- planar

## 4. Size

- up to Ø 45 mm

## 6. Coatings

- a) Metallic
  - Gold for IR systems
- b) Laserline coatings
  - CO<sub>2</sub> lasers