

## TITANIUM DIBORIDE $TiB_2$ Application Data

### Properties

Titanium diboride exhibits extreme hardness, high thermal and electrical conductivity and good oxidation resistance. It is stable against many molten metals.

$TiB_2$  is used as advanced ceramic e.g. for armour plates, cathode material at aluminium electrolysis, as sputter target, evaporation boats and cutting tool material.

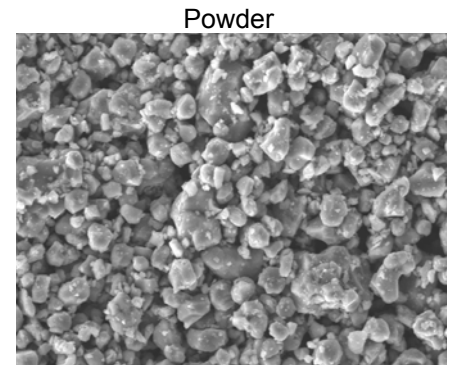
For densification the material requires hot pressing at high temperatures. Additions of sintering aids can promote densification. Contact Treibacher for technical support.

### Powder Analyses: Treibacher $TiB_2$ – standard

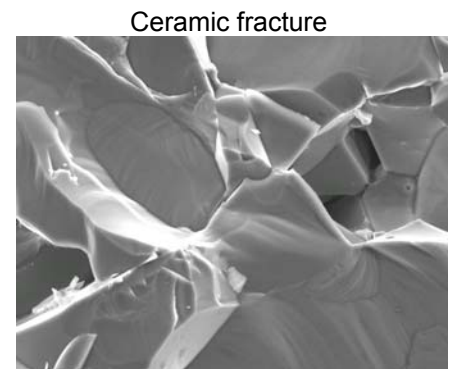
C	1.00 % max
O	1.00 % max
N	0.10 % max
Fe	0.10 % max
TOI	0.10 % max
FSSS	2 – 5 $\mu m$

### Physical parameters of hot pressed ceramic\*

Density / $gcm^{-3}$	4.48
rel. Density / %	98.84
Avg. Grain Size/ $\mu m$	~ 20
Transverse Rupture Strength / MPa	481
spec. electric. Resistance at 19°C / $\Omega$	1.0E-05
Thermal Conductivity at 50°C / $W m^{-1} K^{-1}$	94
Shear Modulus / GPa	237
Young's Modulus / GPa	512
Vickers Hardness HV0.1 / GPa	35



10 $\mu m$

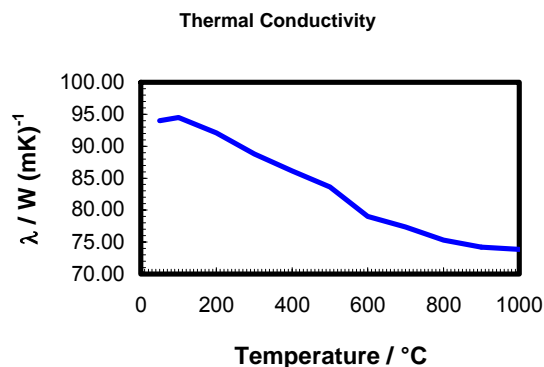


10 $\mu m$

### Packing

- In 13 l coated steel drums with rubber sealing and silica gel
- Material in PE- Bag

Inspection certificate according  
DIN EN 10204 3.1 8



\* plain material without doping or activation, 1800 °C, 45 MPa