

### Grain Size Distribution

d <sub>10</sub>	< 25 μm
d <sub>50</sub>	~ 70 μm
d <sub>90</sub>	> 190 μm

### Chemical Composition

Si <sub>3</sub> N <sub>4</sub>	85 – 92 %
YAG	8 – 15 %
CaO	< 0.03 %
Fe <sub>2</sub> O <sub>3</sub>	< 0.05 %
TiO <sub>2</sub>	0.3 – 0.7 %

These properties are typical but do not constitute specifications

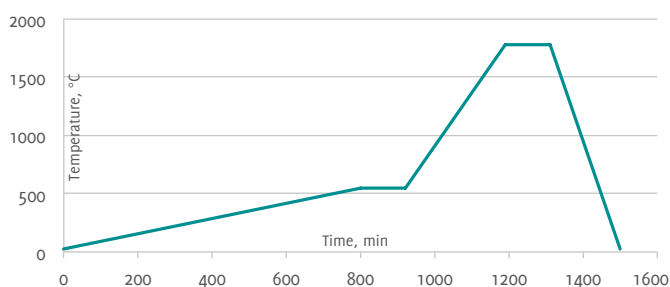
### Physical Properties

Green Density <sup>1)</sup>	1.65 – 1.79 g/cm <sup>3</sup>
Sintered Density <sup>1)</sup>	3.2 – 3.3 g/cm <sup>3</sup>
Apparent Density	0.79 – 0.82 g/cm <sup>3</sup>
Flexural Strength	~860 MPa
Shrinkage	~24 %
Δm <sup>2)</sup>	10 – 12 %
Color	dark grey

1) at 200 MPa 2) weight loss after sintering

### Recommended Sintering Conditions

Sintering Temperature	1750 °C
Debinding	600 °C



The shown debinding and sintering cycles are exemplary. More information on request.

### Applications

Gas Seal Rings, Ball Roller Bearings, Wearing Parts, Plain Bearings, for Cold Isostatic Pressing, Green Machining, Parts with Complex Geometry

### Advantages

- Excellent powder flowability and pressing behavior for low variance of die filling and green density.
- High dimensional accuracy after sintering, low dimensional scrap rate.
- Improved binder system with non-sticking properties on die surface. Reduced down time for mold cleaning.
- Formulation with eco-friendly carbon precursor. No use of phenolic resin. Clean and safe debinding process without toxic emissions. Reduced deposits inside debinding equipment provide for reduced maintenance down time.
- Reduced pressure to obtain the required green density. Reduced cost factor related to tool wear.