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## Product Data Sheet

### Magnesia Stabilized Zirconia

#### Description/Applications

Magnesia Stabilized Zirconia is a fused, partially stabilized zirconia, available as a dense grain, as a hollow bubble, and as a powder.

- The dense grain is used as a primary component in the manufacture of refractories for the continuous casting of steel, for crucibles for the containment of molten metals such as high nickel alloys, and for kiln furniture and setting sands for processing electronic ceramics.

- The bubble is used as a high temperature thermal insulation.

- The powder is used as a ceramic binder for the dense grain, as a primary material for high density nozzles, and a face coat in ceramic molds for the investment casting of titanium.

All products are double fused, produced from 99 % zirconia and magnesium oxide. This process produces a dense, uniformly stabilized zirconia with no areas of free MgO. The low silica content ensures a minimum quantity of glassy phase. This results in a product that is more resistant to slags and molten metal, less reactive with ferrites and titanates, and exhibits higher strength at elevated temperatures.

The dense grain and bubble are available in a variety of sieve sizes from 6 mm to 0,05 mm. The powder is available in standard average particle sizes of 8  $\mu\text{m}$  to 18  $\mu\text{m}$ . Special order sizes down to 1,5  $\mu\text{m}$  can be produced. All zirconia is produced from low urania/thoria zircon sand.

#### Typical chemical analysis

Zirconia + Hafnia	ZrO <sub>2</sub> + HfO <sub>2</sub>	96,05 %
Hafnia	HfO <sub>2</sub>	1,70 %
Magnesia	MgO	3,00 %
Silica	SiO <sub>2</sub>	0,20 %
Calcia	CaO	0,10 %
Titania	TiO <sub>2</sub>	0,20 %
Iron Oxide	Fe <sub>2</sub> O <sub>3</sub>	0,05 %
Alumina	Al <sub>2</sub> O <sub>3</sub>	0,40 %
Uranium + Thorium	U + Th	<500 ppm

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