

## HIGH-PERFORMANCE CERAMICS

### DEGUSSIT ZR25

**Application:**

Thermal shock and high temperatures, insulation

**Material:**

Mg-PSZ DEGUSSIT ZR25

Zirconia is known for its high mechanical strength and a young's modulus similar to that of steel. However, there is now something quite different: in addition to excellent mechanical properties, zirconia has a very high melting point. DEGUSSIT ZR25 withstands temperatures up to 2,300°C, which can be achieved by sophisticated adjustment of the microstructure and suppression of the phase transformation. It has also excellent resistance to thermal shocks due to its porous structure with open porosity over 20%.

It exhibits another positive property resulting from its porous structure: DEGUSSIT ZR25 has a particularly good thermal insulation. With a thermal conductivity of less than 2.5 W/m \* K, it is one of the very few materials that combines low thermal conductivity with best thermal shock resistance making it an ideal insulation material in high-temperature processes.

As DEGUSSIT ZR25 is very well suited to green machining and machining after sintering a variety of shapes and dimensions can be produced using isostatic or conventional presses. This allows not only plates and beams but also more complex components such as crucibles, tubes or slides to be machined from the green body. Surface qualities of  $R_a < 3.8 \mu\text{m}$  can be achieved for specific applications.

**Fields of Application:**

- ▶ Crucibles used for (precious) metal melting (induction heating)
- ▶ Kiln plates / slide plates / kiln furniture
- ▶ Nozzles or slides/plates for steel meltingschmelze

- ▶ Highly resistant to temperatures
- ▶ Excellent resistance to thermoshock
- ▶ Very low thermal conductivity