

## TECHNICAL DATA SHEET

# Advanced Ceramic type MZ

**General notes:**» **Zirconia Toughened Alumina (ZTA)**

- » a superior combination of high strength (from zirconia) and high hardness (from alumina)
- » relatively low density
- » no open porosity
- » very hard surface, good abrasion and wear resistance
- » good flexural strength and fracture toughness
- » excellent thermal properties and high temperature stability
- » extreme corrosion resistance, nearly chemically inert
- » electrically insulating
- » typically applications includes soldering processes, handling of components during thermal and chemical processes. Generally used when very rigid tips are required

## Mechanical properties

|                         |                |
|-------------------------|----------------|
| Flexural modulus        | <b>260 GPa</b> |
| Flexural strength (25°) | <b>700 MPa</b> |
| Hardness Vickers        | <b>1700 HV</b> |

## Thermal properties

|                               |                                                      |           |
|-------------------------------|------------------------------------------------------|-----------|
| Thermal conductivity          | <b>13 W/m K</b>                                      | 25-1000°C |
| Coef. of lin. therm expansion | <b><math>9 \cdot 10^{-6} / ^\circ\text{K}</math></b> |           |
| Max Temperature               | <b>1400°C</b>                                        |           |
| Shock resistance, $\Delta T$  | <b>325°C</b>                                         |           |

## Electrical properties

|                    |                                                |       |
|--------------------|------------------------------------------------|-------|
| Volume resistivity | <b><math>&gt;10^{12} \text{ Ohm cm}</math></b> | 100 V |
|--------------------|------------------------------------------------|-------|

## Other properties

|                  |                              |
|------------------|------------------------------|
| Density          | <b>4.70 g/cm<sup>3</sup></b> |
| Open porosity    | <b>0.0%</b>                  |
| Water absorption | <b>0.0%</b>                  |
| Color            | <b>white</b>                 |