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**CREATING QUALITY STANDARDS FOR THE INDUSTRY**

## Ceramic Injection Molding

### Precision Injection Molding

#### **WM-ATZ 20% Alumina Toughened Zirconia**

WM-ATZ is a 20% by weight Alumina Toughened Zirconia. It has high strength and high hardness. Typical applications that may use this material are: Fluid Handling, Medical Components, Aerospace and areas that require higher strength coupled with a higher wear resistance..

#### Physical Properties

Color	-	White
Sintered Density	-	5.50 g/cc
Bending Strength	-	1900 MPa
Compressive Strength	-	2700 MPa
Fracture Toughness (NB)	-	6.0 MPa <sup>1/2</sup>
Hardness	-	1400 (HV10)
Thermal Conductivity	-	10.0 (W/m*K)

#### Chemical Properties

ZrO <sub>2</sub> + HfO <sub>2</sub> + Y <sub>2</sub> O <sub>3</sub> + Al <sub>2</sub> O <sub>3</sub>	-	> 99.9 wt%
Y <sub>2</sub> O	-	3.60 to 4.20 wt%
Al <sub>2</sub> O <sub>3</sub>	-	≤ 20.0 wt%
SiO <sub>2</sub>	-	≤ 0.02 wt%
Fe <sub>2</sub> O <sub>3</sub>	-	≤ 0.01 wt%
Na <sub>2</sub> O	-	≤ 0.04 wt%

These numbers are typical values for the properties listed. Depending on the end shape and environment, these values may be slightly different. Any questions and or for recommendations on how to design your Ceramic Injection Molded Parts, please contact our Design Engineers at Wunder Mold.

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