



# GNP Graystar

Specialty Materials

AN ISO 9001 CERTIFIED COMPANY



## TECHNICAL DATA SHEET

### Chemical Grade Magnesia-Stabilized Zirconia

#### GNPMgPSZ

Typical Properties		Test Method
% ZrO <sub>2</sub> + HfO <sub>2</sub>	96.4 ± 0.2	XRF
% MgO	3.5 ± 0.1	ICP
% Al <sub>2</sub> O <sub>3</sub> max.	0.05	ICP
% SiO <sub>2</sub> max.	0.02	ICP
% Fe <sub>2</sub> O <sub>3</sub> max.	0.0025	ICP
% TiO <sub>2</sub> max.	0.0025	ICP
L.O.I.	1.5 - 3.0	Resistance Furnace
Bulk Density (g/cm <sup>3</sup> )	1.25 - 1.45	Hall Meter
SSA (m <sup>2</sup> /g)	5-20 m <sup>2</sup> /g	BET

RTP Powder is available in either White or Yellow

#### GNPMSZ-DM-8.0

Typical Properties		Test Method
% ZrO <sub>2</sub> + HfO <sub>2</sub>	94.8 ± 0.2	Bitter Almond Acid Gravimetric Method
% MgO	2.7 ± 0.2	Spectrophotometry
% Al <sub>2</sub> O <sub>3</sub> max.	0.001	Spectrophotometry
% SiO <sub>2</sub> max.	0.007	Spectrophotometry
% Fe <sub>2</sub> O <sub>3</sub> max.	0.003	Spectrophotometry
% TiO <sub>2</sub> max.	0.001	Spectrophotometry
L.O.I.	0.17	Resistance Furnace
% H <sub>2</sub> O	0.07	Resistance Furnace
Bulk Density (g/cm <sup>3</sup> )	1.13	MS2000 Size Analyzer
SSA (m <sup>2</sup> /g)	4	SSA-3600 BET

RTP Powder is available in White

#### Description:

By adding Magnesia to Zirconia, the cubic and tetragonal phases are partially stabilized. This MgPSZ material is white and has excellent durability in cyclic-fatigue environments and is used in applications that require high-strength and resistance to thermal shock.

#### Applications:

GNP Graystar's Chemical Grade Magnesia-Stabilized Zirconia is an ideal material for valve and pump components, bushings and wear sleeves, industrial tool applications, as well as oil and gas down-hole tools.

[info@GNPGraystar.com](mailto:info@GNPGraystar.com)

Rev. 02/2020

**Northern Office**  
37 John Glenn Dr.  
Amherst, NY 14228  
716.759.6600

[www.GNPGraystar.com](http://www.GNPGraystar.com)

**Southern Office**  
9 Simmonsville Rd.  
Bluffton, SC 29910  
843.815.5600