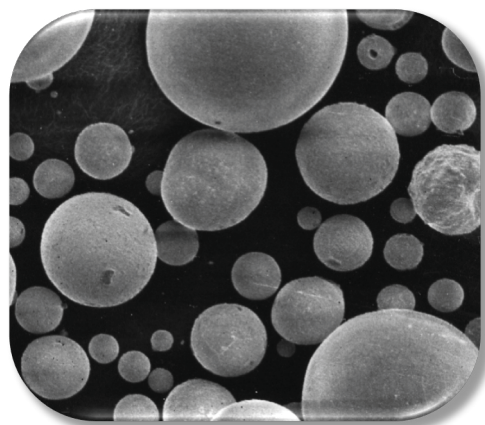


# Thermal Spray Powders Technical Datasheet



## Saint-Gobain Ceria Stabilized Zirconium Oxide

### POWDER CHARACTERISTICS

Product	Nominal Size	Color	Morphology
#222	20-95 micron	Cream	Hollow sphere

### TYPICAL CHEMISTRY

ZrO <sub>2</sub>	HfO <sub>2</sub>	CeO <sub>2</sub>	SiO <sub>2</sub>	Y <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	U+Th	Fe <sub>2</sub> O <sub>3</sub>	CaO
77%	1.5%	21%	0.18%	0.08%	0.08%	0.02%	0.05%	0.06%

### PROPERTIES AND APPLICATIONS

Saint-Gobain #222 series ceria stabilized zirconium oxide is a hollow sphere powder designed for increased performance in thermal barrier applications. These coatings resist thermal shock, erosion, and corrosion in high temperature applications. This material is especially suited for applications that aggressively corrode other stabilizers.

The spherical shape produces more uniform build up rates without clogging or pulsing of the feed lines. In addition, the hollow particles lead to more complete melting and higher deposit efficiencies. Crystal phase content is also tightly controlled to minimize the undesirable monoclinic phase of zirconia. Monoclinic zirconia will expand and contract during thermal cycling and can lead to coating failure.

For higher service temperature applications, Saint-Gobain #204 series 8% yttria stabilized zirconium oxide (YSZ) may be more appropriate. YSZ is most commonly used for thermal barrier applications like the hot zones of aircraft or industrial gas turbines