

# Thermal Spray Powders Technical Datasheet



## Saint-Gobain Calcia Stabilized Zirconium Oxide

### POWDER CHARACTERISTICS

Product	Nominal Size	Color	Morphology
#235	45-75 micron	Yellow	Irregular
#252	15-45 micron	Yellow	Irregular

### TYPICAL CHEMISTRY

ZrO <sub>2</sub>	HfO <sub>2</sub>	CaO	SiO <sub>2</sub>	TiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	U+Th	MgO	Y <sub>2</sub> O <sub>3</sub>
92.4%	1.8%	4.9%	0.10%	0.15%	0.30%	0.02%	0.15%	0.15%

### PROPERTIES AND APPLICATIONS

Saint-Gobain Calcia Stabilized Zirconium Oxide provides good thermal shock and heat resistance for thermal barrier applications. These powders are primarily used for turbine and rocket applications. Other uses include non-aerospace thermal barrier applications and molten metal corrosion resistance for steel works parts.

Crystal phase content is 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. Coarser particle sizes are used to apply thicker coatings at the expense of as sprayed surface finish. For higher service temperature applications, Saint-Gobain #204 series yttria stabilized zirconium oxide may be more appropriate.

Status	Customer Specifications
Approved	PWA 1312
Meets spec	EMS 52432, BMS 10-67 Type 5, EMS 56720 and RR 9507/18. Please inquire about others.

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