

Thermal Spray Powders Technical Datasheet



Saint-Gobain 8% Yttria Stabilized Zirconium Oxide

POWDER CHARACTERISTICS

Product	Nominal Size	Color	Morphology
#204, #204GEP, #204C, #204SS	25-95 micron	Cream	Hollow sphere
#204PR, #204RR, #204-1613	44-100 micron	Cream	Hollow sphere
#204F	10-45 micron	Cream	Hollow sphere

TYPICAL CHEMISTRY

ZrO ₂	HfO ₂	Y ₂ O ₃	SiO ₂	TiO ₂	Al ₂ O ₃	U+Th	Fe ₂ O ₃	CaO
90%	1.80%	7.50%	0.15%	0.08%	0.08%	0.02%	0.02%	0.02%

PROPERTIES AND APPLICATIONS

Saint-Gobain #204 series 8% yttria stabilized zirconium oxide (YSZ) was designed with a spherical shape that 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.

These coatings resist thermal shock, erosion, and corrosion in high temperature applications. YSZ is most commonly used for thermal barrier applications like the hot zones of aircraft or industrial gas turbines. Powder characteristics should be chosen based on application, required porosity, and desired coating microstructure.

Status	Customer Specifications
Approved	PWA 1375, CPW 673, GE A50TF278 CL C, GE P16BAG8 CL B, GE A50A557, A50AG1, A50A558, Honeywell EMS 57750, EMS 52510, M3966 Type 2, and MHCP 010-006
Meets spec	GE A50TF278 CL B, RRMS 40000, EMS 57750 Type III, TACR MS004, and RR 9507/46 Please inquire about others.

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