

ZIRCONIUM OXIDE FOR TECHNICAL CERAMICS APPLICATIONS

FINE DOPED GRADES

GENERAL CHARACTERISTICS

Pangea International Fine Doped Grades zirconium oxides is a range of sub-micron, sinter active powders doped with fine magnesia, ceria or yttria. Which are manufactured using either a chemical processing route or a special thermal process. The dopants content, particle size and surface area can be adapted to suite specific requirements.



APPLICATIONS

Fine doped grades powders have a smaller surface area which contributes to a smooth flow for the compound or slurry. The properties make them suitable for tape casting, slip casting and injection moulding techniques. The powders are used in applications such as engineering ceramics, milling media, fibre optic ferrules, oxygen sensors and solid oxide fuel cells.

POWDER CHARACTERISTICS

Grade	ZZ-MZ01	ZZ-CE01	ZZ-YZ01	C-3Y	C-3YL
MgO	3.2	-	-		
CeO ₂	-	18	-		
Y ₂ O ₃	-	-	5.25	5.2±0.2	5.2±0.2
SiO ₂	≤0.1	≤0.1	≤0.1	≤0.01	≤0.01
Al ₂ O ₃	≤0.02	≤0.02	0.25	-	-
Fe ₂ O ₃	≤0.02	≤0.02	≤0.02	≤0.01	≤0.01
TiO ₂	≤0.1	≤0.1	≤0.1	≤0.001	≤0.001
Average Particle Size(D ₅₀)	0.8µm	0.8µm	0.8µm	< 1µm	< 1µm
Specific Surface Area (m ² /g)	7.2	7.2	7.2	8±2	15±3

TYPICAL PROPERTIES OF SINTERED BODY

Sinterable Temperature (°C)	1700	1700	1700	1520	1400
Density (g/cm ³)	5.7	6.2	6.05	6	6
Flexural Strength (MPa)	600	1200	1100	1150	1150
Fracture Toughness (Mpa.M ^{1/2})	7	9	10	10	10
Hardness Vickers HV10	1200	1300	1250	1250	1250
Colour	Yellow	Golden brown	Yellow	White	White

For inquiries, please contact:



Pangea International Ltd.
Unit 303, No.3, Lane 259 Huangjincheng Rd.,
Shanghai 201103 - CHINA
Tel: +86 21 62082768 Fax: +86 21 54995682
info@pangea-intl.com www.pangea-intl.com



Zhengzhou Zhenzhong Fused Zirconia Co., Ltd.
No. 77 Daxue Road
Zhengzhou 450052 - CHINA