

CY3Z-M grades

TECHNICAL DATA SHEET

- 3% molar Y₂O₃ stabilized zirconia made by chemical process.
- CY3Z-M grades exhibit a high reactivity (SSA of 15m²/g) and purity (>99.9%).
- Recommended for the manufacturing by injection molding or additive manufacturing of small size ceramic parts with fine microstructure.

CHEMICAL ANALYSIS (wt%)

ZrO ₂ +HfO ₂	Y ₂ O ₃	Al ₂ O ₃	SiO ₂	Na ₂ O	TiO ₂	Fe ₂ O ₃	LOI
94.3	5.40±0.20	0.25±0.20*	<0.02	<0.02	<0.005	<0.005	<1.0%

*0% for CY3-MS

Analytical methods:

- XRF measurement for Y₂O₃ and Al₂O₃
- ICP for the other elements
- ZrO₂+HfO₂ by difference

PHYSICAL PROPERTIES

	CY3Z-MA	CY3Z-MS
Al ₂ O ₃ (wt%)	0.25	-
Specific surface area (m ² /g)	15	
Particle size distribution*		
d50 (µm)	0.2	
d90 (µm)	<1.0	

Analytical methods:

- Specific surface area by B.E.T.
- Particle size distribution by laser diffraction

APPLICATION PROPERTIES

- Ceramic sintering

	CY3Z-MA	CY3Z-MS
Sintering temperature (°C)	1350 - 2 hours	1400 - 2 hours
Ceramic density	> 6.05	

Refer to our recommendations for thermal processing

- Mechanical properties of final ceramics

Hardness (HV03)*	Flexural strength (MPa)**	Fracture toughness K _{1C} (MPa.m ^{1/2})***
1250	1000	5.5

* Vickers indentation (ISO 6507)

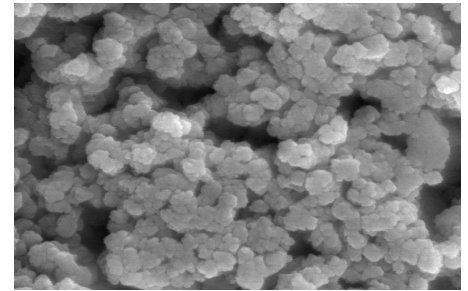
** 4 points bending (ISO 6872)

*** DCM (ISO 6507)

SAFETY DATA SHEET AVAILABLE

PACKAGING

25 kg plastic drums.



MAIN APPLICATIONS

- Ferrules for optical fiber connectors
- Small ceramic parts with fine structure
- Ceramic Injection Molding (CIM)

CERAMIC PROPERTIES

- High mechanical strength
- Wear & scratch resistance
- Smooth finishing

Saint-Gobain ZirPro is the expert in zirconia-based materials for industrial applications. From our global network of manufacturing, commercial and research facilities, we serve leading customers through long-term and trust-based relationships.

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