

UprYZe™ -Shock

TECHNICAL DATA SHEET

- Co-doped alumina-toughened zirconia material reinforced by self-grown alumina platelets.
- UprYZe-Shock exhibits outstanding toughness ($15\text{MPa}\cdot\text{m}^{1/2}$) and impact resistance.
- Available in both dry powder (UprYZe-Shock) and ready-to-press granules (UprYZe-Shock G)

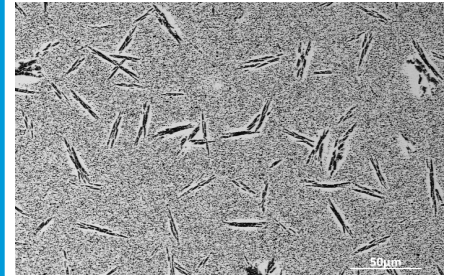
CHEMICAL ANALYSIS (wt%)

ZrO ₂ +HfO ₂	Y ₂ O ₃ +CeO ₂	Al ₂ O ₃	SiO ₂	Na ₂ O	TiO ₂	Fe ₂ O ₃	LOI
79.0	6.0±0.7	15±1.0	<0.02	<0.02	<0.005	<0.005	<1 / 3*

*UprYZe-Shock G

Analytical methods:

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



PHYSICAL PROPERTIES

	UprYZe-Shock	UprYZe-Shock G
Specific surface area (m ² /g)	8.5	8.5
Particle size distribution*		
d50 (µm)	0.25	60 (granules)
d90 (µm)	<2.0	<120 (granules)

Analytical methods:

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

APPLICATION PROPERTIES

- Ceramic sintering

	UprYZe-Shock	UprYZe-Shock G
Ceramic density	≥ 5.65	
Sintering temperature (°C)	1450 - 2 hours	

Refer to our recommendations for thermal processing

- Mechanical properties of final ceramics

Hardness (HV05)*	Flexural strength (MPa)**	Fracture toughness K _{1C} (MPa·m ^{1/2})***
1300	1000	15

* Vickers indentation (ISO 6507) ** 3 points bending (NF EN843-1) *** DCM (ISO

MAIN APPLICATIONS

- Structural ceramics
- Shock-resistant parts

CERAMIC PROPERTIES

- Outstanding toughness
- Excellent impact resistance
- Easy processing

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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SAFETY DATA SHEET AVAILABLE

PACKAGING

20 kg cardboard box.