

UprYZe™ -Shock

TECHNICAL DATA SHEET

- Unique composite material based on stabilized-zirconia and alumina.
- Outstanding toughness ($14\text{MPa}\cdot\text{m}^{1/2}$) and impact resistance.
- Unique microstructure made of self-grown alumina platelets.
- Available in both dry powder (UprYZe-Shock) and ready-to-press granules (UprYZe-Shock-G)

CHEMICAL ANALYSIS (ppm)

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%	6%	15%	≤200	≤200	≤50	≤50	≤1% / 3%**

* by difference ** UprYZe-Shock-G (RTP)

PHYSICAL PROPERTIES

	UprYZe-Shock	UprYZe-Shock-G
Specific surface area (m ² /g)	8	8
Particle size distribution		
d50 (μm)*	0.2	60 (granules)
d98 (μm)*	<2.0	-

*Analytical method: laser diffraction

APPLICATION PROPERTIES

- Ceramic sintering

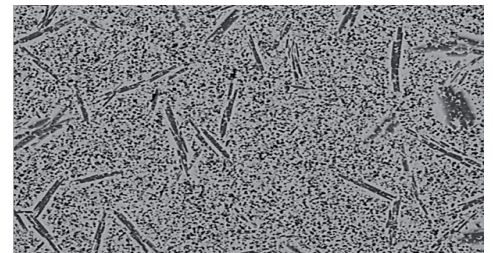
	UprYZe-Shock	UprYZe-Shock-G
Ceramic density (g.cm ⁻³)	5.7	
Sintering temperature (°C)	1450 - 2 hours	

Refer to our recommendations for thermal processing

- Mechanical properties of final ceramics

Hardness (HV0.3)*	Flexural strength (MPa)**	Fracture toughness K _{1C} (MPa.m ^{1/2})***
1250	1000	14

* Vickers indentation ** 3 points bending (NF EN843-1) *** ISB (ASTM C1421)



MAIN APPLICATIONS

- Structural ceramics
- Shock-resistant parts

CERAMIC PROPERTIES

- Outstanding toughness
- Excellent impact resistance
- Easy processing

SAFETY DATA SHEET AVAILABLE

PACKAGING

20 kg plastic drums.