

✂ UPRYZE-SHOCK IS ALLOWING TO ACHIEVE CERAMIC PARTS WITH OUTSTANDING TOUGHNESS AND IMPACT RESISTANCE

UprYZe-Shock grade is a co-doped alumina-toughened zirconia reinforced with alumina-based platelets. Based on a specifically engineered composition and a unique microstructure, UprYZe-Shock provides outstanding performance:

- Toughness of $15\text{MPa}\cdot\text{m}^{0.5}$
- Bending strength of 1000MPa
- Improved impact resistance: +50% vs. CY3Z type grade.

UprYZe-Shock is proposed either as a dry powder (UprYZe-Shock) for injection molding or casting or as ready-to-press granules (UprYZe-Shock G) for uniaxial pressing or CIP.

🔍 TYPICAL PARTICLE SIZE & SPECIFIC SURFACE AREA

	Particle size ^a (μm) D50	Granules size ^a (μm) D50	Specific Surface Area ^b (m ² /g)
UprYZe-Shock	0.2	/	8
UprYZe-Shock-G	0.2	50	8

^a : Laser diffraction - ^b : B.E.T. measurement

⚙ MAIN APPLICATIONS

- Welding and locating pins
- Kitchen knives
- Can toolings
- Advanced structural ceramics



Ceramic welding pins

🔬 CHEMICAL ANALYSIS

	Chemistry ^a (wt%)						L.O.I. ^c (wt%)
	Y ₂ O ₃ + CeO ₂	Al ₂ O ₃	SiO ₂	Na ₂ O	Fe ₂ O ₃	TiO ₂	
UprYZe-Shock							≤1.0
UprYZe-Shock-G	6 ± 0.7	15 ± 1.0	<0.02	<0.02	<0.02	<0.05	2.5 - 3.5

^a : XRF for Y₂O₃, CeO₂ and Al₂O₃, ICP for the other elements; ^b : Loss weight from 20°C to 1000°C

🔍 CERAMIC PROPERTIES

	Density ^a	Fracture toughness K _{IC} ^b (MPa·m ^{0.5})	Bending strength ^c (Mpa)	Hardness ^d (HV05)
UprYZe-Shock UprYZe-Shock-G	≥5.63	15	900	1300

^a : 1450°C for 2hrs in air ; ^b : DCM (ISO 14627) ; ^c : 3 points bending (NF EN843-1) ; ^d : Vickers indentation (ISO 6507)

📦 PACKAGING

- 20kg cardboard box

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