Refractron Structural Ceramics

Have you benchmarked your supply chain?

Zirconia parts for pumps & valves

Enhance Operational Effectiveness

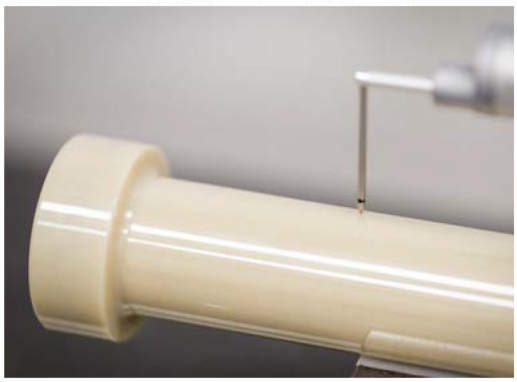
- ✓ Dependable size, material & polish
- ✓ Responsive service
- ✓ Just in time inventory

Improve Reliability

Increase Profitability

Lowest Total Cost

- ✓ Fair market pricing
- ✓ Reliable performance
- ✓ Extended life of mating parts



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Newark, NY 14513, USA

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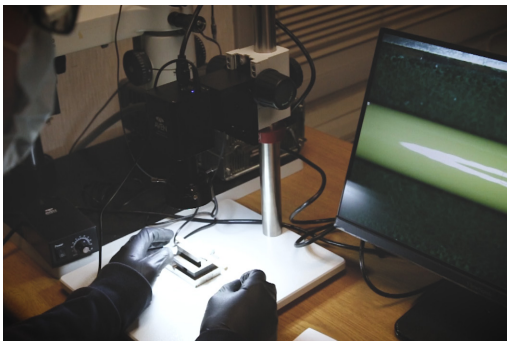
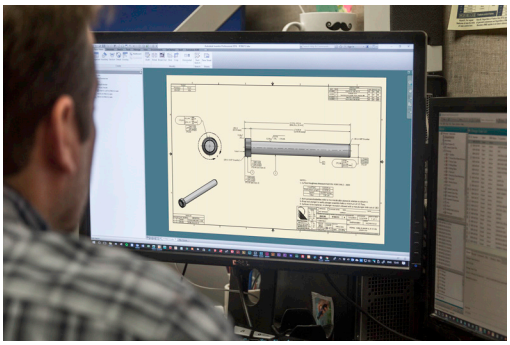
Refractron

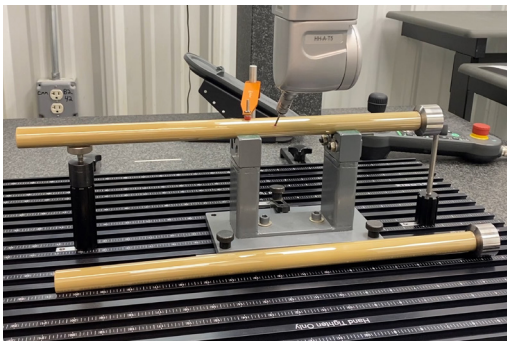
102021

Refractron Advanced Ceramics

Zirconia for severe service and high pressure systems







PROPERTIES	MgPSZ	Y-TZP	ATZ
	Izory® HD	Dark HIPed	HIPed
COLOR	Ivory	Tan	White
CHEMISTRY: $ZrO_2 + HfO_2 + MgO$ [%]	97.14		
$ZrO_2 + HfO_2 + Y_2O_3$ [%]		99.50	79.95
Al_2O_3 [%]		0.30	20
Other [%]	2.86	0.20	0.05
DENSITY [g/cm³] ISO 18754	5.78	6.08	5.50
WATER ABSORPTION ASTM-373	nil	nil	nil
GRAIN SIZE [µm] ASTM E-112	20	0.4	0.7
FRACTURE TOUGHNESS K_{IC} [MPAm$^{1/2}$] ASTM C-1421	10	5.2	9.0
LOOP ABRASION [mm³] ASTM G174 (d)	0.100	0.060	0.010
MODULUS OF ELASTICITY MOE [GPa] ASTM E1876-99	214	214	296
MODULUS OF RUPTURE 4pt MOR [MPa] ASTM C-1161	650	1550	1360
HARDNESS VICKERS [HV1] ASTM C1327-08	1225	1550	1730
POISSON RATIO ASTM E1876-99	0.31	0.32	0.27
COMPRESSIVE STRENGTH [MPa] ASTM C773	1760	2580	2100
THERMAL CONDUCTIVITY RT [W/m K] ASTM C408	2.50	2.18	6.00
COEFFICIENT OF THERMAL EXP. x10⁻⁶/°C [25-1000 °C] ASTM C372	10.2	10.7	9.0
MAXIMUM USE LIMIT [°C] ISO 18754	500	1500	1500

NOTES: Typical values are not intended to be used as a specification. Contact Refractron for application suitability.

Refractron is a privately owned company that has been making durable ceramics for over 35 years at its 90.000 ft² factory in Newark, New York, approximately 30 miles east of Rochester.

The factory, which is ISO 9001:2015 and ITAR certified, is home to a team of 60 employees. The group includes a host of application, design and process engineers to support our customers. The factory has all the production and testing equipment necessary to develop and manufacture dense zirconia and porous alumina technical ceramics. A comprehensive grind shop allows us to offer those products with tight tolerances and a pristine surface finish. Our on-site labs and our partnership with Alfred University's College of Ceramics allow detailed characterization of our materials and products.

The products are used in a vast array of industries including oil & gas, wire & cable, medical equipment, chemical processing, waterjet cutting, mining, waste water, drinking water and semiconductors.

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