



**ADVANCED
CERAMICS**

**FOR SENSOR
COMPONENTS**



ADVANCED MATERIALS AND CAPABILITIES FOR ALL YOUR SENSOR NEEDS

Technical Ceramics Experts for Nearly 100 Years!

Founded in 1910, CoorsTek is the largest technical ceramics manufacturer in North America and provides critical sensor components to OEMs and their suppliers from 16 state-of-the-art facilities around the globe.

Ceramic Sensor Components Market Leader

CoorsTek manufactures over 100 million advanced ceramic sensors components every year.

Markets Served:

- Medical
- Automotive
- Electronics
- Aerospace
- Telecom
- Industrial
- Other applications

Types:

- Capacitive sensing elements
 - Automotive/HVAC
 - Air conditioners
 - Exhaust
- Piezo-resistive
- Altitude sensing elements

Advanced Materials for Long-Life, High-Performance

From high-purity alumina formulas to advanced, zirconia-toughened blends and custom materials, our experts help you select best-fit materials suited to your specific application.

Hands-On Service Professionals

Whether you need one or one million components, CoorsTek offers exceptionally fast lead times and provides expert design engineering assistance and material selection to match your sensing need.

Advanced Secondary Processing Services:

We offer several services to get you to market faster:

- Pre/post-fired machining
- Laser machining
- Metallization services
- Rapid prototyping
- In-house analytical labs

OpXSM Quality and Manufacturing System

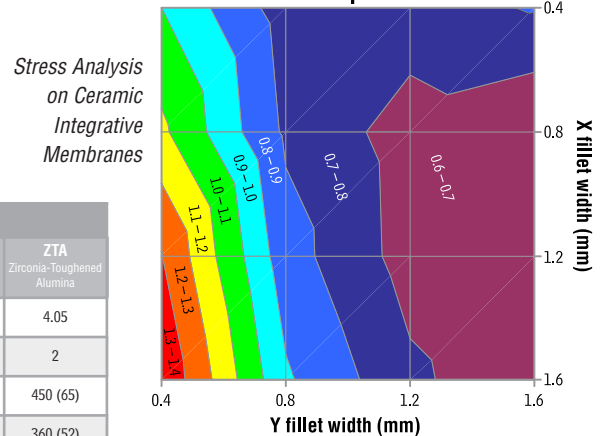
Exclusive to CoorsTek, the OpX system includes ISO and TS-16949 certifications, lean manufacturing, and Six Sigma techniques to ensure top-quality components.

Advanced Sensor Materials						
Property	Units	Test	AD-96 Nom. 96% Al ₂ O ₃	FG-995 Nom. 98.5% Al ₂ O ₃	AD-995 Nom. 99.5% Al ₂ O ₃	ZTA Zirconia-Toughened Alumina
Density	gm/cc	ASTM-C20	3.72	3.80	3.90	4.05
Crystal Size	MICRONS	THIN-SECTION	6	6	6	2
Flexural Strength (MOR)	MPa (psi x 10 ³)	ASTM-F417	358 (52)	375 (54)	379 (55)	450 (65)
Elastic Modulus	GPa (psi x 10 ⁴)	ASTM-C848	303 (44)	350 (51)	370 (54)	360 (52)
Compressive Strength	MPa (psi x 10 ³)	ASTM-C773	2068 (300)	2500 (363)	2600 (377)	2900 (421)
Hardness	GPa (kg/mm ²)	KNOOP 1000g ROCKWELL 45 N	11.5 (1175) 78	13.7 (1400) 82	14.1 (1440) 83	14.4 (1475) 85
Tensile Strength	MPa (psi x 10 ³)	ACMA TEST #4	221 (32)	248 (36)	262 (38)	290 (42)
Coefficient of Thermal Exp.	1x10 ⁻⁶ /°C	ASTM-C372	8.2	8.2	8.2	8.3
Dielectric Constant	25° C	ASTM-D150	9.0	9.6	9.7	10.6
Volume Resistivity						
25° C		ASTM-D1829	> 10 ¹⁴	> 10 ¹⁴	> 10 ¹⁴	> 10 ¹⁴
500° C	ohm-cm		4 x 10 ⁹	2 x 10 ¹⁰	2 x 10 ¹⁰	2 x 10 ⁹
1000° C			1 x 10 ⁶	2 x 10 ⁶	2 x 10 ⁶	3 x 10 ⁶

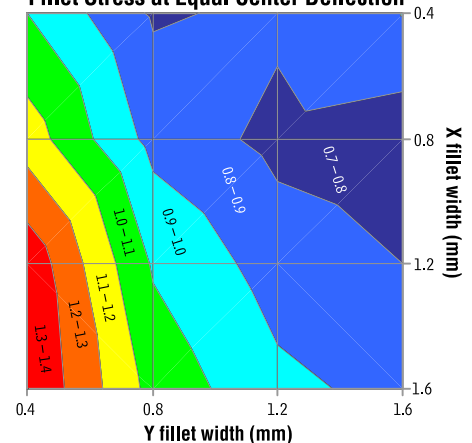
Note: The chart is intended to illustrate typical properties. Engineering data is representative. Property values vary somewhat with method of manufacture, size, and shape of part. This data is not to be construed as absolute and does not constitute a warranty for which we assume legal responsibility.

Call CoorsTek for Your Next Sensor Project at 303.277.4766

Fillet Stress at Equal Center Strain



Fillet Stress at Equal Center Deflection



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