

**ADVANCED
CERAMIC**

**VACUUM WAFER
CHUCKS**

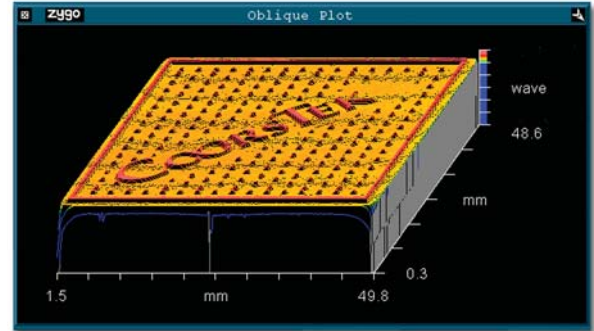
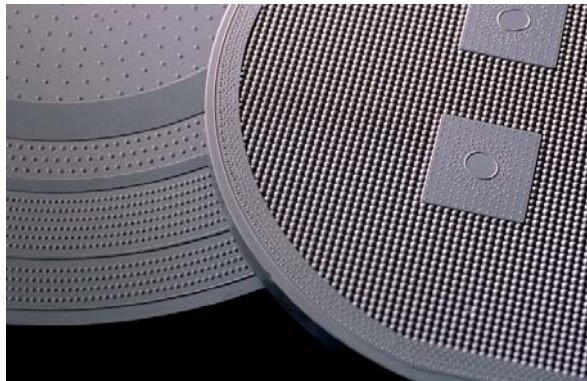
ADVANCED CERAMIC VACUUM WAFER CHUCKS

Materials Developed Specifically for Wafer Handling

As a leader in technical ceramics for wafer processing equipment, CoorsTek understands advanced semiconductor manufacturing and constantly develops new materials, designs, and processes to optimize yields and extend product life.

Our ultra-flat ceramic vacuum wafer chucks improve yield management for semiconductor wafer processing. Low-surface-contact configurations minimize risk of back-side particles negatively affecting wafer geometry for precision applications. We offer:

- Ultra-flat capabilities
- Exceptionally lightweight
- Low thermal expansion
- Extreme wear resistance
- Mirror polish
- High stiffness
- Large size capability – 300mm and beyond



Zygo flatness report – one of several tools CoorsTek uses to test and measure precision geometry

High-Purity Materials Expertise

From powder production and basic forming to precision finishing and measurement, CoorsTek produces high-quality, top-performance components.

You'll find our materials:

- Reduce the effect of particulate contamination
- Offer ultra-clean purity
- Minimize wafer contact
- Resist corrosion in aggressive chemical cleaning

Typical applications:

- Lithography
- Inspection
- Wafer cleaning
- Non-vacuum process chambers

Call us today!

We're ready to help improve yields now!

Call +1.503.693.2193 for more information.



Property	Units	Test	UltraSiC™ SiC	PureSiC® HR CVD-SiC	PureSiC® LR CVD-SiC	PlasmaPure™ Alumina
			Direct Sintered	Deposition, >99.9995%	Deposition, >99.9995%	Nom. 99.8%
Density	gm/cc	ASTM-C 20	3.15	3.21	3.21	3.93
Color	–	–	Black	Black	Black	Ivory
Flexural Strength (MOR), 20° C	MPa (psi X 10 ³)	ASTM-F417	480 (70)	468 (68)	517 (75)	400 (58)
Elastic Modulus, 20° C	GPa (psi X 10 ⁴)	ASTM-C848	410 (59)	462 (67)	434 (63)	370 (54)
Compressive Strength, 20° C	MPa (psi X 10 ³)	ASTM-C773	3500 (507)	–	–	2700 (390)
Hardness	GPa (kg/mm ²)	Knoop 100 gm	26 (2650)	27 (2750)	27 (2750)	14.1 (1440)
Fracture Toughness, K (I c)	MPa m ^{1/2}	Notched Beam	4	3.5	3.5	4 - 5
Thermal Conductivity, 100° C	W/m °K	ASTM-C408	150	115	115	30.0
CTE, 20° C	1X 10 ⁻⁶ /°C	–	2.1	2.1	2.1	6.1
Thermal Shock Resistance, ΔTc	°C	NOTE 3	300	–	–	200
Maximum Use Temperature	°C	NO-LOAD COND.	1600	1600	1600	1750
Volume Resistivity, 25° C	Ohm-cm	ASTM-D1829	< 10 ⁶	> 10 ⁶	< 0.10	> 10 ¹⁴
Volume Resistivity, 500° C	Ohm-cm	ASTM-D1829	< 10 ⁶	–	–	1 x 10 ¹¹
Volume Resistivity, 1000° C	Ohm-cm	ASTM-D1829	< 10 ⁶	–	–	3 x 10 ⁸

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. Any suggested applications are not made as a representation or warranty that the material will ultimately be suitable for such applications. The customer is ultimately responsible for all design and material suitability decisions. Data contained herein is not to be construed as absolute and does not constitute a representation or warranty for which CoorsTek assumes legal responsibility. ANY WARRANTY OR REPRESENTATION FOR WHICH COORSTEK IS RESPONSIBLE SHALL BE SUBJECT TO A SEPARATELY NEGOTIATED AGREEMENT.

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