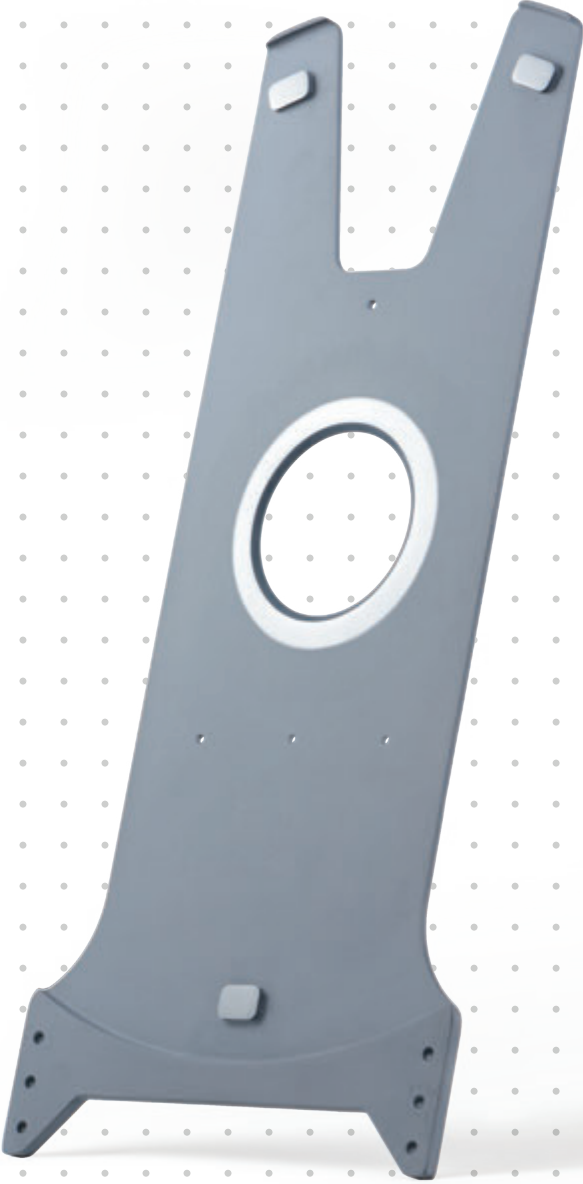




StatSafe™ ESD-Safe Ceramics



Protect your Sensitive Devices from ESD with CoorsTek StatSafe™ Ceramics

Leaders in Engineered Ceramics

As the world's largest manufacturer of engineered ceramics, CoorsTek provides innovative ESD-safe ceramic components for semiconductor technology leaders around the globe.

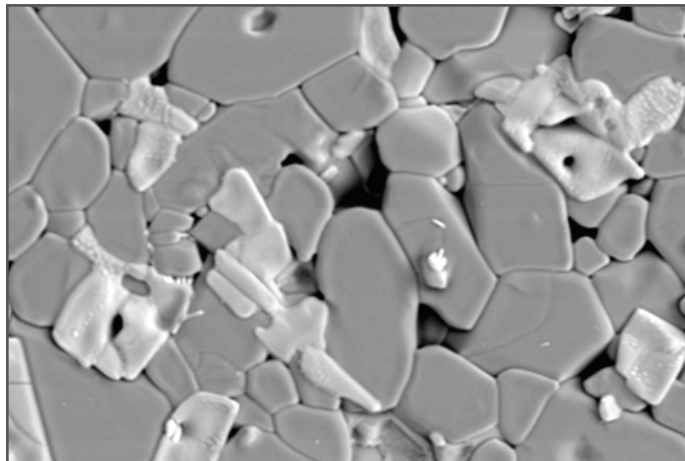
ESD-Safe Through and Through

Developed specifically to protect sensitive microelectronic components from electrostatic discharge (ESD), CoorsTek StatSafe™ has an engineered volume resistivity which permits bleed off of accumulated static charge in your wafer processing equipment. Because StatSafe was engineered as a monolithic material, and not a surface coating:

- Concerns of spalling and shedding are mitigated
- Resistivity is an intrinsic property
- Products can be machined to precise tolerances (up to 500mm diameter x 25mm thick)
- Products can be laser marked

The monolithic material approach also allows a more cost-effective approach to product design, as secondary coating and thermal processing are not required.

This static-dissipative composition excels in critical wafer handling applications, and is especially well suited for end effector construction.



STATSAFE ENGINEERED CERAMIC MICROSTRUCTURE

Engineered to be Measurably Better

The key to the performance of StatSafe is its engineered, multi-phase microstructure. By starting with the proven foundation of a semiconductor-grade aluminum oxide, CoorsTek has developed a formulation yielding an in-situ formed conductive phase.

The result is a material that demonstrates:

- Exceptional stiffness
- Excellent static-dissipation characteristics.
- Superior surface-finish capabilities (0.3 μm)
- Outstanding dimensional stability

Superior Quality

Our signature OpX™ quality and manufacturing excellence system combines best-practice methods including lean manufacturing, six-sigma, and ISO-certification to ensure high-quality products, on-time delivery, and exceptional service. Our Copy Exact protocol for Semiconductor products assures consistent and predictable material properties, a hallmark of CoorsTek engineered materials.

Design Services and Manufacturing Capabilities

CoorsTek Semiconductor specialists will help you select the best material and design configuration for your application. Our extensive capital base, diverse ceramic processing capabilities, and global footprint assure you of world-class quality and revenue-enhancing value. Contact us for expert engineering and materials assistance.

STATSAFE MATERIAL PROPERTIES

| PROPERTY | UNITS | VALUE |
|-----------------------|---------|------------------------------------|
| Color | - | Black |
| Volume Resistivity | ohm•cm | 10 ⁸ - 10 ¹⁰ |
| Density | gm/cc | 3.85 |
| Modulus of Elasticity | GPa | 370 |
| Flexural Strength | MPa | 300 |
| Thermal Conductivity | W/m °K | 25 |
| CTE | ppm/ °C | 8 |

The chart is intended to illustrate typical properties. Property values vary with method of manufacture, size, and shape of part. Data contained herein is not to be construed as absolute and does not constitute a representation or warranty for which CoorsTek assumes legal responsibility. StatSafe and OpX are trademarks of CoorsTek, Inc. CoorsTek is a registered trademarks of CoorsTek, Inc.



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