CoorsTek.

Semiconductor Processing Components Application Guide



SEMICONDUCTOR PROCESSING COMPONENTS

CoorsTek is your partner for enabling innovations in semiconductor processing. Our broad portfolio of semiconductor grade materials, component production capabilities, and application engineering services help you solve big challenges. See how our solutions can help you innovate with components that last longer, reduce cycle times, and improve yields.

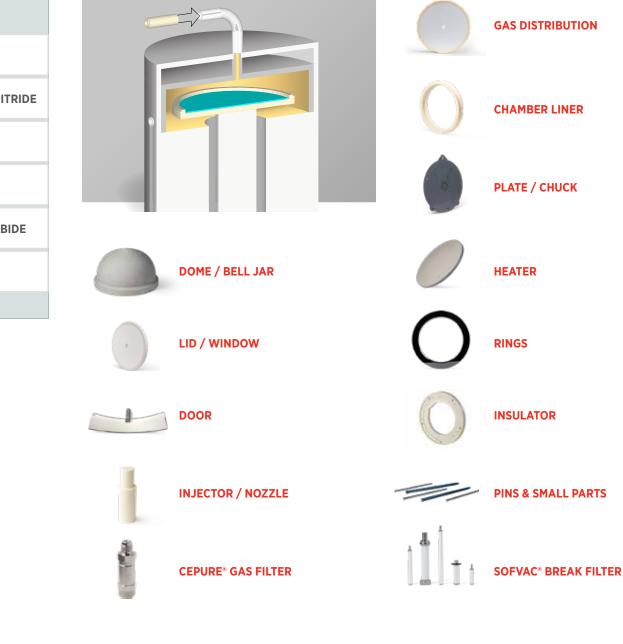
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ETCH & DEPOSITION SOLUTIONS

CoorsTek is a leader in critical chamber components for plasma etch and deposition equipment. Our semi-grade materials are custom engineered to deliver clean, repeatable, and durable performance to OEM's exacting standards.

Key materials:

Al ₂ O ₃	ALUMINA
AIN	ALUMINUM NITRIDE
SiO ₂	QUARTZ
Si	SILICON
SiC	SILICON CARBIDE
Y ₂ O ₃	YTTRIA

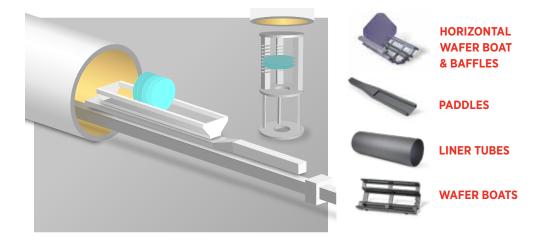


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CoorsTek is your partner for enabling innovations in semiconductor processing. See how our ceramic solutions can help you innovate with components that last longer, reduce cycle times, and improve yields.

THERMAL SOLUTIONS

High-temperature semiconductor processing requires specialized materials to endure thermal cycles up to 1,750°C while providing clean, reliable performance. CoorsTek provides custom engineered components for all types of thermal equipment including batch, diffusion, and anneal furnaces, epitaxy, low pressure chemical vapor deposition (LPCVD), and rapid thermal processing (RTP).



WAFER PROCESSING SOLUTIONS

CoorsTek provides a range of high-purity components used to make silicon, silicon carbide (SiC), and gallium nitride (GaN) semiconductor wafers – including crucibles for single crystal silicon pulling, plates for chemical-mechanical planarization (CMP) and polishing, susceptors for epitaxial wafers, and polycrystalline epiwafer substrates for wide bandgap wafers.

Component examples:

- Crucibles (single crystal pulling)
- Epitaxy chambers
- Epiwafer substrates
- Filters | gas, vacuum venting & exhaust
- Heater plates
- Polishing plates
- Rings
- Susceptors

APPLICATION-SPECIFIC SOLUTIONS

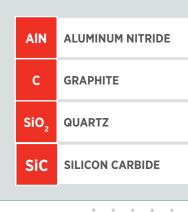
Many semiconductor process advancements are enabled by components and materials engineered specifically to the application including: EUV lithography and inspection stages with remarkable dimensional stability, photomask substrates with optical-grade transparency, chemical-mechanical planarization (CMP) polishing plates with ultra-flat surfaces and internal cooling channels, wafer end effectors with electro-static discharge (ESD) safe handling, and many more.

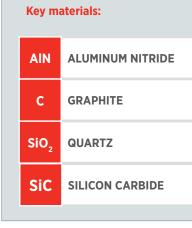
Component examples:

- CMP plates
- End effectors
- General wafer handling
- Inspection tables
- Lithography stages

- Photomask substrates
- Scintillators
- Wafer chucks
- Custom components & assemblies

Key materials:





Key materials:



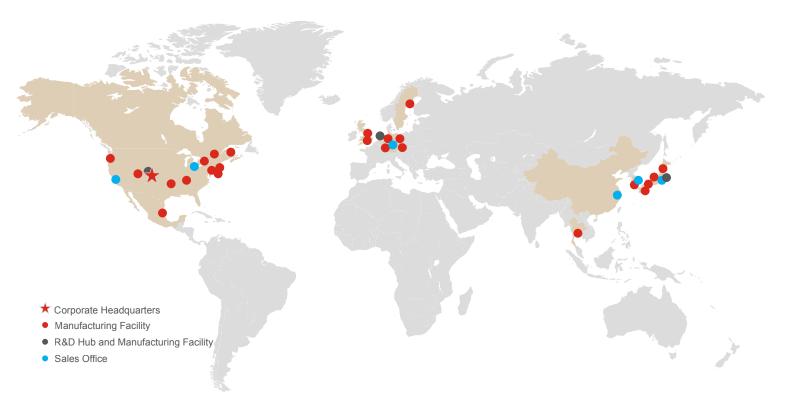
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About CoorsTek

For over 110 years, industry leaders have relied on CoorsTek for solutions to the world's most perplexing engineering and manufacturing challenges. Since the inception of the semiconductor and electronics industries, CoorsTek has served the world's most innovative OEMs by producing exceptionally durable, reliable, and high-purity ceramic components.

CoorsTek is one of the world's leading manufacturers of engineered ceramics for the semiconductor industry. CoorsTek offers an extensive portfolio of semiconductor-grade materials from A to Z – including aluminas, carbides, coatings, graphite, nitrides, quartz, silicon, yttrias, zirconias, and custom compounds engineered for specific applications.

CoorsTek partners with you to help solve challenges – engaging your experts with our leading applications engineers, material scientists, and research and development experts at hubs near our customers in Asia, North America, and Europe. We collaborate to optimize your designs, design for manufacturing, prototype, and scale to consistent volume production backed by process of record methodologies.



We engineer advanced ceramics to solve your biggest challenges.

When you choose CoorsTek, you get a complete package to ensure superior performance for your custom engineered components:

Design Consultation

Our materials experts work with your team to understand your application and create an optimal, best value solution. And if engineered ceramics aren't the best fit, we tell you.

Performance Testing

Our engineered ceramics are designed for high performance, so we evaluate lab and field test data to make sure they're measurably better – delivering the results you require.

Manufacturing Expertise

Our solutions could incorporate virtually every ceramic manufacturing technology known from powder to part – but we use what fits you best. We design for manufacturability, build with excellence, and deliver with speed.

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