

Technical Ceramics for Household Durables -
Improved Quality & Efficiency, and Longer-Life

COORSTEK

ENGINEERED CERAMICS LEADER



MATERIALS

400+ Vertically Integrated Ceramic Solutions



CAPACITY

500,000 m² Ceramic Manufacturing Space



EXPERTISE

6,000+ Team Members Worldwide



VISION | We Make the World Measurably Better

HERITAGE OF INNOVATION

< 1900s

2000s



1870s

- Golden Brewery



1910

- Coors Porcelain



1940s

- Isostatic Pressed Media



1920s

- World Leader in Labware

1930s

- Expansion of Labware



1950s

- Recyclable Aluminum Can

1960s

- High-purity Alumina



1970s

- Thin-film Substrates



1980s

- Advanced Engineered Ceramics

1990s

- Armor Expansion



2000s

- Coors Ceramics becomes CoorsTek
- Global Expansion
- CVD Silicon Carbide



2010s

- Co-CEOs
- Diversifying Product Portfolio Through Acquisition
- Investments in Infrastructure



CERAMIC MANUFACTURING

Vertically integrated process control = engineered performance



MATERIALS

- Chemical
- Physical
- Morphological



FIRING

- Temperature & time
- Densification
- Shrinkage



1

2

3

4



FORMING

- Dimensions & form
- Net shape / near net
- Enabling methods

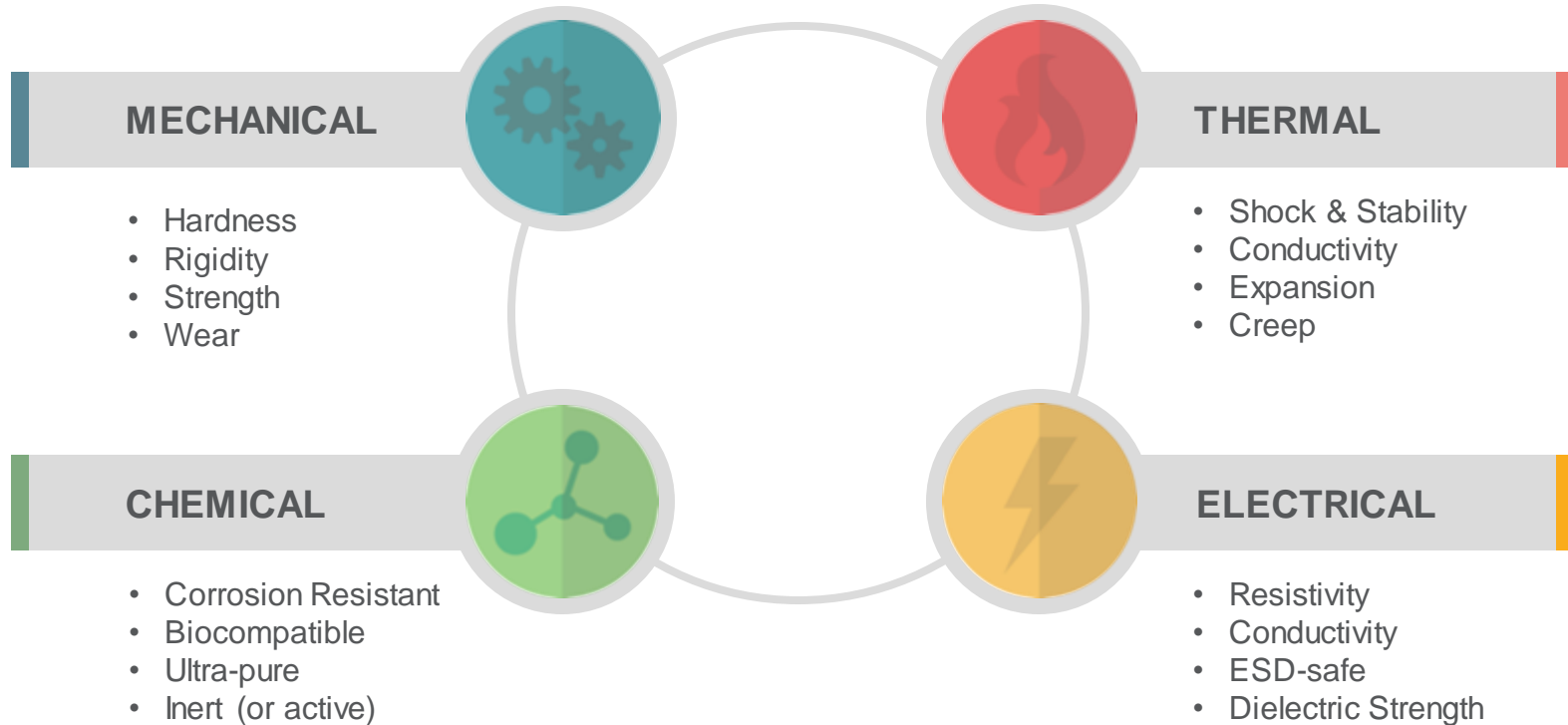


FINISHING

- Precise tolerancing
- Custom features
- Function-specific operations



WHY CERAMIC - EXCELLING AGAINST OTHER MATERIALS



CoorsTek IP IS IN OUR ADVANCED MATERIALS



ALUMINAS



CARBIDES



COMPOSITES



GRAPHITE



NITRIDES



QUARTZ / SILICA



SILICON



RARE EARTHS



ZIRCONIAS

NEXT
GENERATION
MATERIAL

ENGINEERED CERAMICS – VARIOUS APPLICATIONS



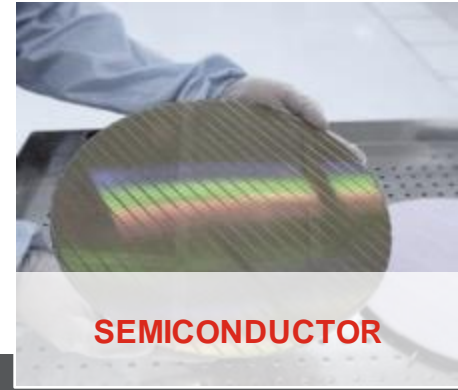
AEROSPACE & DEFENSE



AUTOMOTIVE



ENERGY & CHEMICALS



SEMICONDUCTOR

DIVERSE OFFERINGS IN KEY GLOBAL MARKETS



**AGRICULTURE
& NUTRITION**



**HOUSEHOLD
DURABLE GOODS**



**ELECTRONICS
& ELECTRICAL**



**MEDICAL DEVICES
& IMPLANTS**

CERAMIC PARTS FOR COFFEE MACHINES

Coffee Grinder Burrs and Piercers

BENEFITS

- Neutral taste
- Wear resistance
- High hardness
- Complete chemical inertia
- High heat conductivity
- Large heat capacity
- Design flexibility
- High geometric reproducibility

APPLICATIONS

- Domestic appliances
- Coffee machines



CERAMIC BLADES AND SHARPENERS

Long-Life and Precision with Ceramic Blades and Sharpeners

BENEFITS

- Up to 100x lifetime compared to standard steel
- Electrically resistant with ESD options
- Corrosion resistant
- High strength
- Greater mechanical strength than tungsten carbide
- Absence of metal phase for improving corrosion wear
- Fine-grain structures allows for finishes $<1\mu\text{m}$

APPLICATIONS

- Knife sharpeners
- Large ceramic trimmer blades
- Receipt cutters for registers and point-of-sale use



HEATING PLAQUES IN HOME & OUTDOOR EQUIPMENT

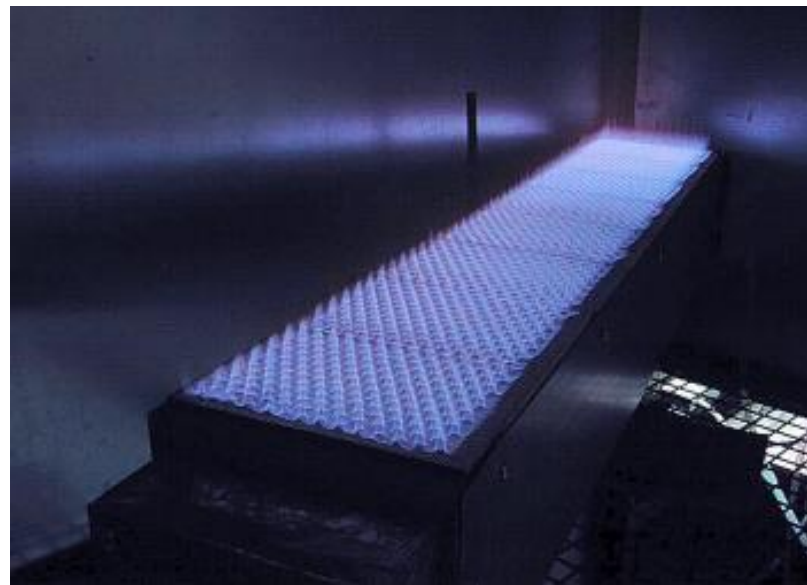
Maximizing performance for Ceramic heating components

BENEFITS

- Longer life and excellent thermal stability
- High operating temperatures
- Low thermal expansion rates

APPLICATIONS

- Infracer™ ceramic perforated plaques: flame control
- Outdoor grills
- Room heaters
- Radiant heaters
- Water and central heating boilers
- Process techniques
- Glass-ceramic cooking tops



HIGH-PERFORMANCE TECHNICAL CERAMIC BALLS

Silicon nitride bearing balls and blanks

BENEFITS

- Lighter, Harder, Stiffer, and Lower thermal expansion compared to traditional steel alloys
- Electrically resistant
- Corrosion resistant
- Decreased friction
- Lower lubrication required
- Reduced wear
- Vibration elimination

APPLICATIONS

- Micro-bearings in dental drills
- Small appliance requiring high-speed rotary motion such as blenders, food processors





PARTNERSHIPS

Highly collaborative, responsive,
and reliable relationships



RESEARCH & DEVELOPMENT

Broad research, development,
and manufacturing capabilities



ENGINEERING

Unsurpassed expertise in
ceramic engineering



OPERATIONAL EXCELLENCE

Internationally recognized
quality systems

We **Make** the World
Measurably Better.

COORST[®]TEK