AUTOMOTIVE SOLUTIONS

Realize the Competitive Edge with Technical Ceramics

CoorsTek®

ADVANCING WITH TECHNOLOGY

The automotive landscape is changing rapidly. From autonomous technologies to electric and advanced fueling systems to car sharing and connected mobility, the only certainty is that transportation systems of the future will require new and innovative technologies, materials, and designs. Reliability standards will be pushed beyond today's limits. Systems will run hotter, longer, and have more electrical and wireless connections. In the meantime, traditional vehicles equipped with internal combustion engines still rule the road, and performance standards on these systems continue to increase.

For now and into the foreseeable future, automobiles will continue to require components manufactured from cutting edge materials. Technical ceramics are some of the few materials available that can meet the needs of this ever changing industry.

With unsurpassed materials and manufacturing expertise, global capacity, and an unwavering commitment to quality, CoorsTek is the international partner of choice for automotive suppliers requiring the unique, high performance properties of technical ceramics. Realize the competitive edge with CoorsTek.

TECHNICAL CERAMICS: THE POWERHOUSE OF ADVANCED MATERIALS

Automotive applications require materials that push beyond the limits of traditional materials. Technical ceramics can survive extreme temperature and corrosive environments that destroy metals and plastics. They offer superior mechanical strength and have numerous other material properties that can be engineered to fit the application, such as superior dielectric strength.

There is no one particular property that makes ceramic worthy of being labeled the powerhouse of advanced materials. It is the combination of properties—along with the versatility and range of materials that set them apart.

CoorsTek ceramics offer outstanding performance since they can be both electrically insulative and thermally conductive at the same time, which is not possible with metals (electrically conductive) or plastics (thermally insulative). Ceramics can also be engineered to be as strong as metals—outperforming them in many mechanically demanding applications.

The CoorsTek material portfolio includes over 300 advanced ceramic formulations, including oxides, carbides, nitrides, silicates, and specialty materials such as transparent ceramics and ceramic membranes.

CoorsTek engineers work with our customers to select the appropriate material formulations and processes for each application, ensuring performance, quality, and manufacturability with each project.

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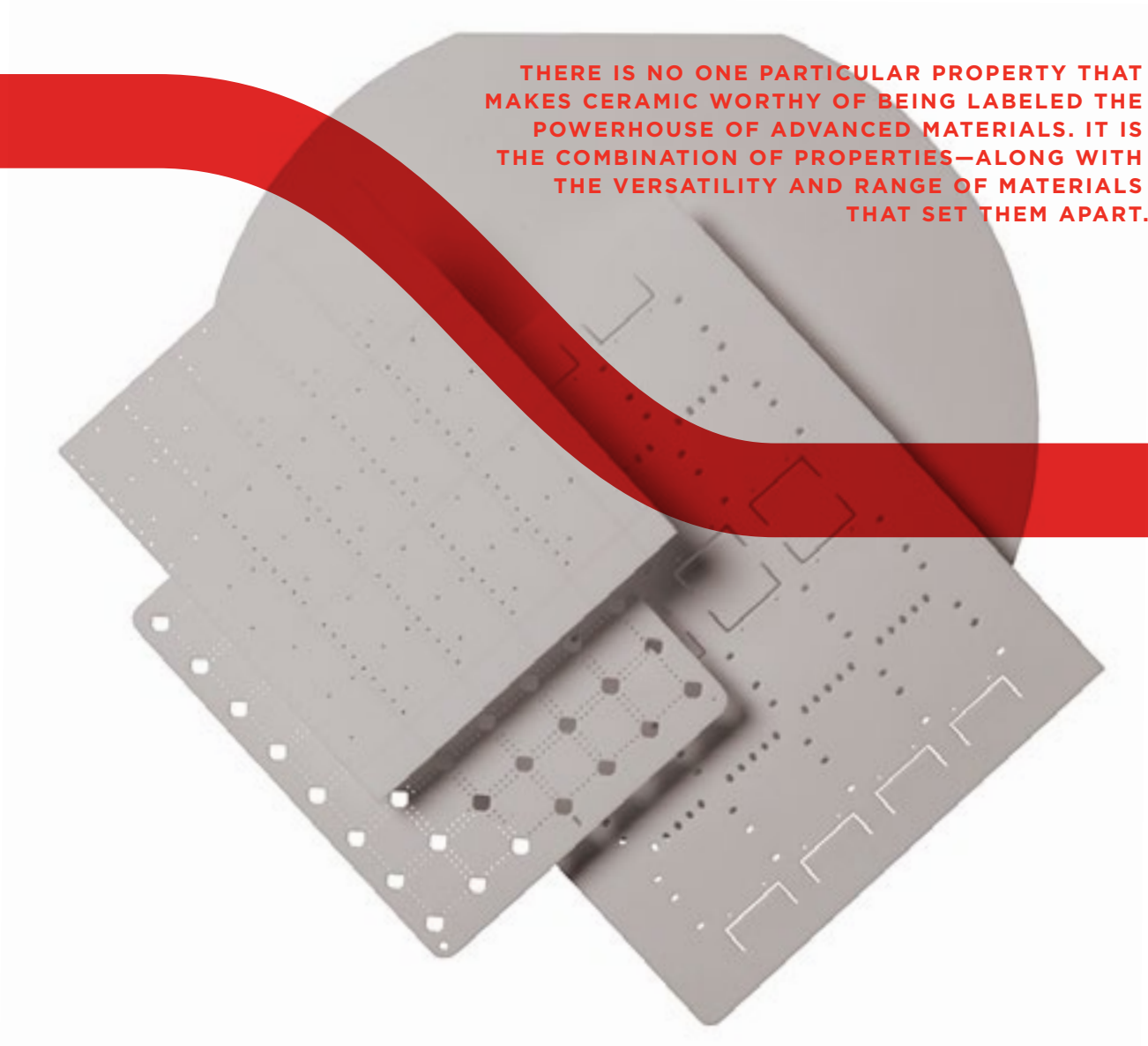

CUSTOM SOLUTIONS & DESIGN FOR MANUFACTURABILITY

AUTOMOTIVE CAPABILITIES

At CoorsTek, the development of custom components is our core competency. We offer a full suite of technical capabilities ranging from early stage R&D to predictive performance analytics, manufacturing feasibility analysis, and production trials. We can take a step back and view your project with fresh eyes—starting with the why and the what.

We bring more than 100 years of proven technical ceramics expertise to help you create an optimal product. At CoorsTek, we thrive on finding efficient solutions to new, complex challenges.

See below for a list of common applications. Contact CoorsTek to discuss your custom component needs.

1 AIR CONDITIONING SENSORS

2 CIRCUIT BOARDS

3 CARBON BRUSHES

4 FUEL INJECTOR VALVES

5 GPS ANTENNAS

6 BATTERY ELECTRICAL

7 PTC HEATERS

8 LiDAR (OPTICS)

9 TEMPERATURE SENSORS

10 SENSOR COMPONENTS

11 WATER PUMP SEALS

12 LED LIGHTING

13 FUEL PUMP SEALS

14 BEARINGS

15 FUEL PRESSURE SENSORS

16 POWER ELECTRONICS

17 OIL PRESSURE SENSORS

18 CHASSIS LEVELING VALVES

WHY COORSTEK?

GLOBAL CAPACITY

No matter where you are located, CoorsTek works to serve you locally — supporting your business with over 30 manufacturing facilities and sales offices in North America, Europe, and Asia. With immense manufacturing capacity and streamlined equipment and processes, CoorsTek is capable of supporting smaller, specialized production runs to large scale, mass produced applications.

EXPERTISE

From materials development to manufacturing processes to finishing capabilities and inspection, CoorsTek has unparalleled expertise at every step of the product journey. We take extraordinary measures to hire only the most dedicated and creative individuals with the right education, the right skills, and the right experience to provide an end product that goes beyond our customers' expectations. The key component to our success is our people.

**"IF YOU WANT TO GO FAST, GO ALONE.
IF YOU WANT TO GO FAR, GO TOGETHER."**

–AFRICAN PROVERB

COOPERATIVE DEVELOPMENT

YOUR PARTNER IN ADVANCED MOBILITY

Few major technological advancements have been made in a vacuum. Wilbur Wright had Orville. Marie Curie had Pierre. Holmes had Watson. Roadblocks are inevitable as new frontiers in mobility are being explored. Contact CoorsTek regarding cooperative development opportunities to help you remove these barriers. Together, we can take a collaborative approach to solving your material, design, and component needs. Together we can go far.

STABILITY

Since 1910, CoorsTek has provided technical ceramics to industry leaders worldwide. Privately owned and operated by the fifth generation of the Coors family, CoorsTek is uniquely positioned as a stable corporate partner.

CoorsTek takes a systematic and proactive approach to Business Continuity Planning (BCP), and continually considers the best ways to effectively respond to a multitude of potential events.

R&D

Opened in 2017, The $120M CoorsTek Center for Advanced Materials in Golden, CO USA is an ultra-modern R&D facility with the most advanced development and testing equipment available for materials science research. With additional regional R&D hubs in Tokyo, Japan and Uden, Netherlands, CoorsTek is consistently pioneering efforts to create new ceramic frontiers, leading global technical ceramic development, and paving the way for the next generation of breakthroughs in material technology.

QUALITY

CoorsTek Quality Management systems are based on international standards, and are audited annually by accredited certification bodies. Our manufacturing facilities are certified to TS-16949 standards to meet the expectations of this market. ISO 9001 registration and compliance with ISO 14000 are expectations for every CoorsTek facility.

The requirements of these quality and environmental management standards are integrated with CoorsTek business systems to help ensure we meet our customers' short- and long-term needs.

We take pride in our systematic approach to ensuring CoorsTek remains an industry leader.

COMMON APPLICATIONS & BENEFITS

CoorsTek technical ceramics can be formulated and manufactured to provide the ideal mechanical, thermal, electrical, and chemical properties for a wide range of automotive and transportation applications.

● Primary benefit
○ Secondary benefit

Segment	Vehicle Application	Corrosion Resistance	Mechanical Strength	Wear Resistance	Superior Dimensional Control	Low Weight	Thermal Stability	Thermal Conductivity	Electrical Resistivity/ Conductivity
Autonomous & Sensing	LiDAR	○	○	○	●	○	●		
	Sensors	●	●	○	○	○	●	○	○
Chassis	Chassis Valves	○	●	●	○	○			
E-mobility	Battery Electrical	○	●	●	○	○	●	●	●
	Bearings	●	●	●	●	●	●	○	●
	DC Motors	○	○	●	○	○	●	○	●
	Electronics	○	●		○	○	●	●	●
	Head Lamp (high brightness)	○	●		●	○	●	○	○
	PTC Heaters	○	○		○	○	●	●	●
	Power Electronics	○	●		○	○	●	●	●
Powertrain	Bearings	●	●	●	●	●	●	○	○
	Fuel System	●	●	●	●	○	○		
	Metal Castings		●	○	○		●		
	Water Pumps	●	●	●	○	○	○	○	

Criticality of material properties will be determined by customer requirements and specifications. Representative chart only.

PARTNER WITH COORSTEK

Our customer focus is the reason we have become the world's leading manufacturer of technical ceramics. To learn more about CoorsTek and our automotive capabilities, contact us:

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