



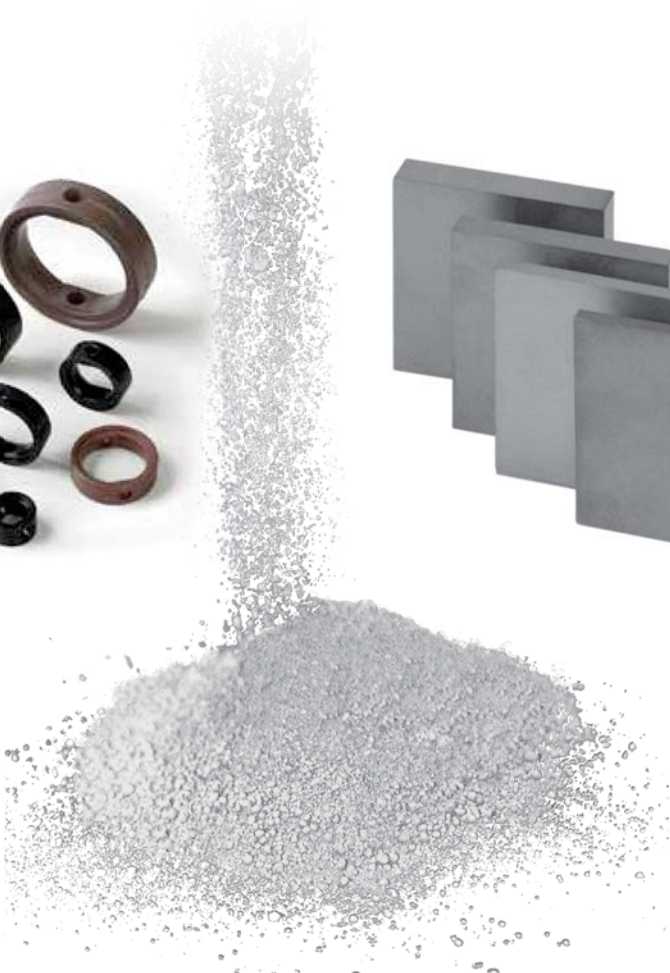
# SINTER-PUR

Advanced ceramics, shapes and powders

**Alpha Silicon Carbide**

**Beta Silicon Carbide**

**Boron Carbide**





## Sinter-Pur Ceramic Powders:

### Performance ceramics, shapes and powers

Superior Graphite employs state-of-the-art milling technologies to create highly sinterable non-oxide ceramic powders. Sinter-Pur line includes Alpha and Beta Silicon Carbide, and Boron Carbide. We manufacture virgin powders, as well as ready-to-press formulations.

Do you need custom sizes, blends or shapes? We are happy to work with your specifications! Innovating and meeting customers' needs since 1917, we are a specialty supplier of high-quality ceramic powders and we hold up to the highest standards as an ISO-certified company.

### Main Markets:

Friction, MMC, Advanced Ceramics (wear parts and armor), Toner.



grinding wheels



toners



nozzles

# Alpha SiC

Our green Alpha Silicon Carbide is suitable for advanced sintered ceramic parts. Superior Graphite produces virgin powders, as well as ready-to-press formulations. To achieve optimum quality, consistency and uniformity, our powders are wet-attrition milled and spray-dried.

### Applications:

Seals, nozzles, sintered wear parts, ceramic armor, mechanical seals and armor, composite and coating additive, specialty filter, abrasive for polishing.

# Beta SiC

Superior Graphite is a market-maker of green Beta Silicon Carbide. This material is synthesized in our state-of-the-art fluidized bed graphite furnace. Our microgrits and powders are both wet-attrition milled and spray-dried, ball-milled or airmilled and classified to produce a variety of grades. The cubic structure of Beta Silicon Carbide gives this material unique properties suitable for niche applications.

### Applications:

Toner, sintered ceramic parts, abrasive applications, such as high-performance brake parts, wire-sawing.

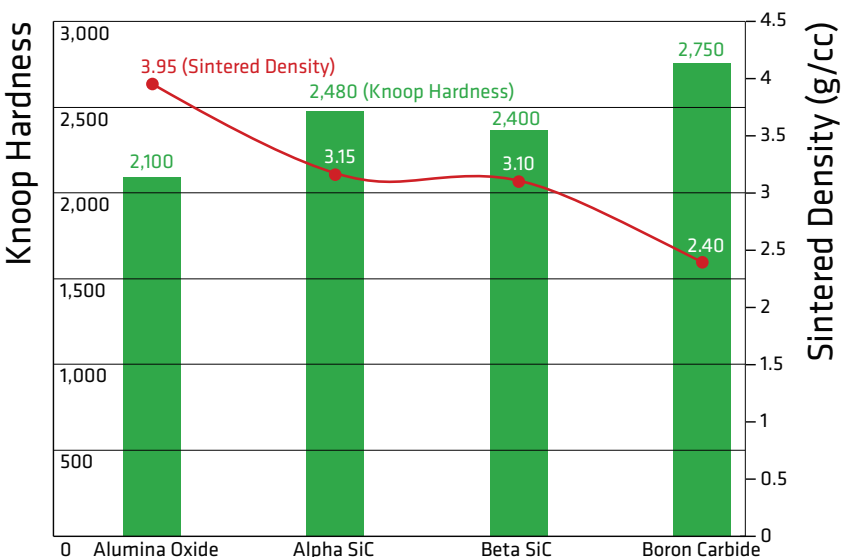
# Boron Carbide

Superior Graphite produces submicron Boron Carbide powder using state-of-the-art milling techniques reducing boron carbide grits to sub-micron size. We target a low surface oxygen-level yielding a higher final sintered density. Parts made with our Boron Carbide will yield an overall final weight of up to 20% less than silicon carbide and 35% less than alumina, while at the same time keeping its superior hardness.

### Applications:

Wear parts, abrasives (for ultrasonic cutting and lapping), nuclear shielding, ceramic armor, and also used as a sintering aid.

## Ceramic Powder Physical Characteristics





**SINTER-PUR**

## **Performance Ceramics**

- **Quality**
- **Convenience**
- **Product Breadth**

# Sinter-Pur Advantages:

## Quality

- Superior Strength and Durability
- Lightweight Materials

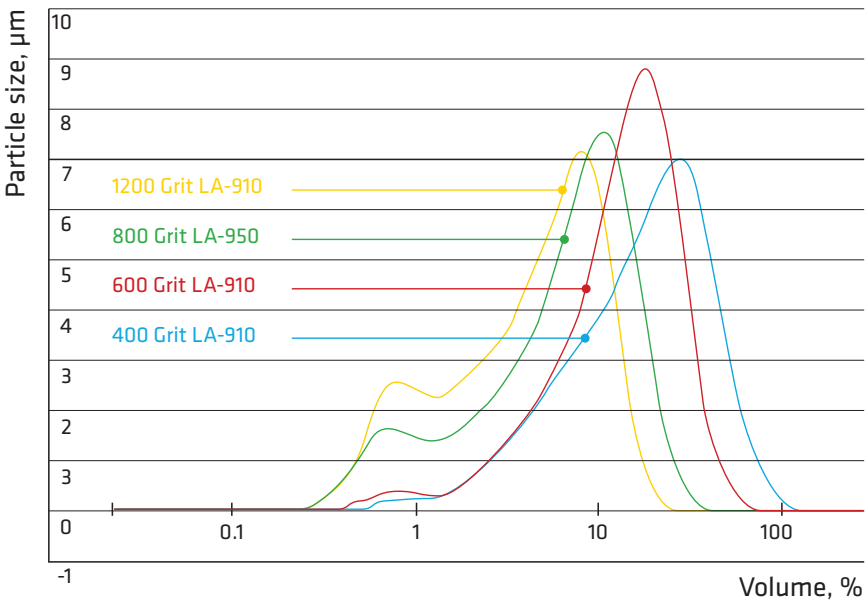
## Convenience

- Vertically integrated: producing powders, ceramic tiles and shapes—all in one facility!
- Enhanced capabilities: in-house water-jet cutting, grinding and surface conditioning
- Extensive analytical lab: characterization of Alpha and Beta Silicon Carbide, as well as Boron Carbide powders and shapes

## Product breadth

- We are one of the few manufacturers to produce Alpha and Beta Silicon Carbide, as well as Boron Carbide.

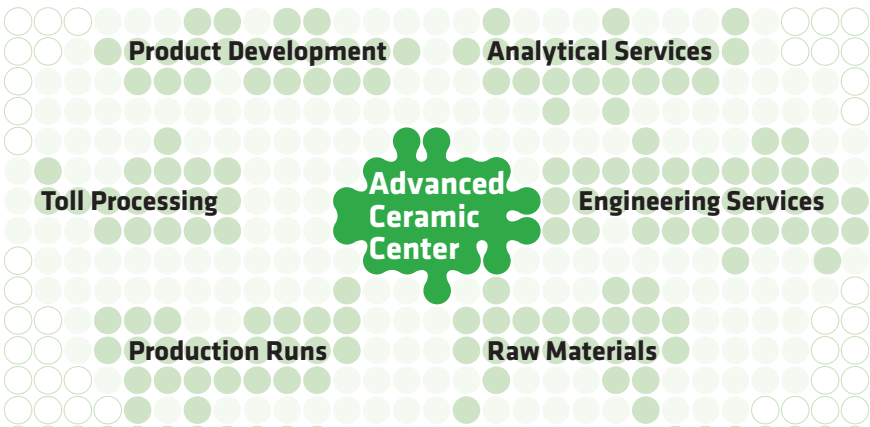
## Beta Silicon Carbide Particle Size Distribution



## Advanced Ceramic Center

Superior Graphite created the Advanced Ceramic Center to give our customers access to new product development, toll processing, analytical and engineering services, as well as small to medium production runs. Our advanced laboratory and plant equipment, as well as superior talent and quality material availability give us a unique opportunity to create collaborative partnerships and meet our customers' unique needs. Below is the list of our Advanced Ceramic Center capabilities, and the list is growing!

### Sinter-Pur Support Platforms



**Analytical Services** – XRD, XRF, SEM, Density, Hardness, Particle Size Distribution, BET

**Toll Processing** – Pressing, Drying, Sintering, Cutting, Polishing

**Engineering Services** – On-site and Off-site consulting, Project Management

**Raw Materials** – Alpha SiC, Beta SiC, B4C, Graphite (variety of grades and sizes)

**Product Development** – Prototyping

**Production Runs** – Pilot and full production runs.



#### OUR MISSION:

We create value for our customers by providing SUPERIOR SOLUTIONS – utilizing our unique technologies, processes and talents – while contributing to the company's long-term success.

### Superior Graphite

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