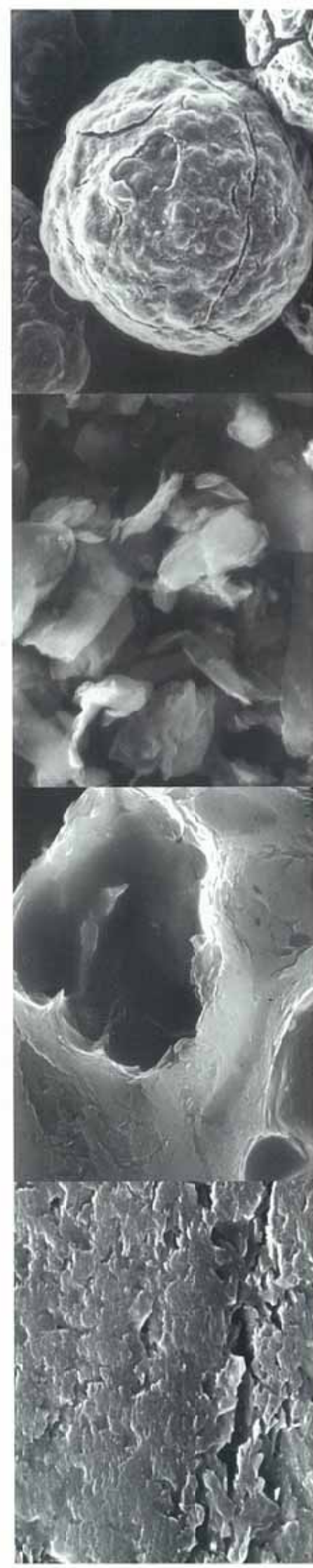


Resilient Graphitic Carbons

Providing unique properties
to promote unique materials



Business Centers:
Chicago, IL, USA
Sundsvall, Sweden

Manufacturing Facilities:
Chicago, IL, USA (3)
Hopkinsville, KY, USA (2)
Russellville, AR, USA (1)
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ISO 9001:2000
certified quality management system



What are RGC Materials?

RGC materials are one of the **most unique graphitic carbons** available today. Produced using patented **high temperature thermal purification technology**, and coupled with 85 years of graphite/carbon expertise, these products offer a new view of graphite powders.

Utilizing a variety of **custom raw materials**, RGC materials are developed with the end user in mind. These raw material sources are selected for quality, consistency, and both unique chemical composition and morphology. Once exposed to the thermal purification process, these materials are transformed into material with **high purity** and the **added feature of resiliency**.

Resilient Graphitic Carbons are used for highly innovative products in different applications:

- **Friction Materials**
- **Carbon Brushes and Parts**
- **Polymer Composites**
- **Coatings & Lubrication**
- **Hot Metal Forming**
- **Energy Materials**
- **Oil Field Lubricants**

Our innovative, highly educated and skilled development team, continually strives to engineer new RGC materials with **revolutionary properties**. This team is dedicated to investigate the performance of our products in the field and evaluates new raw material sources and advanced technologies to develop advanced knowledge of the carbon matrix. The development team supports our field sales engineering teams worldwide by providing technical information, expert product analysis, and specific recommendations or alternative solutions for customers.



Superior Graphite

Throughout its long history, Superior Graphite has remained committed to three core principles: ingenuity, versatility, integrity. This has enabled us to adapt to ever-changing business and economic conditions, and led to a process of continuous growth and evolution with our customers.

Since its foundation in 1917, our company has explored the physical and geographic frontiers of its markets. In the late 1970's, this pioneering approach led to the invention of a new, patented furnace technology that revolutionized our product range and transformed the company. Until then, graphite was mainly processed from natural mineral resources or the re-crushing of spent electrodes. We were the first to **manufacture graphite** powder on a continuous basis using proprietary technology. We subsequently expanded the boundaries of natural and synthetic graphite purification, as well as the process of synthesizing graphite or other carbon-based materials. We have also explored new avenues in continuous graphitization, and developed a number of innovative processes.

We are committed to continuously collaborate with our business partners, harnessing the challenges of today, and turning them into the opportunities of tomorrow. Solutions from Superior Graphite are tools that will positively impact your success.

*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.*



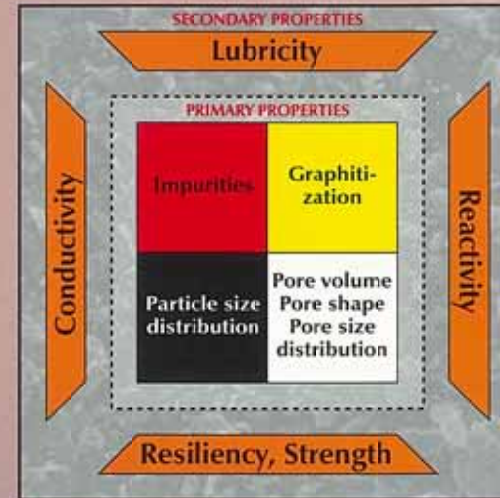
Primary and Secondary Properties

Graphite and coke as well as RGC's are controlled in their properties by key characteristics such as:

- Degree of Graphitization
- Level of Impurities
- Pore Size and Morphology
- Particle Surface Morphology

RGC's have proven to be an innovative raw material for numerous applications.

The unique combination of strength, lubricity and resiliency is based on the accurate control of these primary properties.

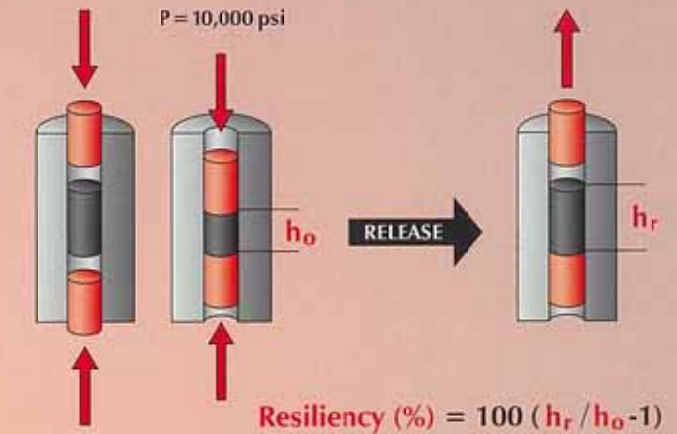


Resiliency Test Method

In order to quantify resiliency, a mechanical test method is applied.

Samples are placed in a metallic mold and exposed to various pressures ranging from 5-70 MPa (700-10,000 psi).

Particles are compressed and are able to recover their shape after pressure is released without damage.



RGC's show a unique spring back effect, higher than all other known carbonaceous materials.

Properties of RGC Materials

High Temperature Manufacturing Process

Based on a proprietary high temperature process, Superior Graphite has developed the concept of producing RGC's

Controlled carbonaceous raw materials are specifically chosen and are subjected to temperatures of 1900°C-2700°C.

In this high temperature technology, impurities are removed thus leaving a very unique and controlled microstructure. The degree of graphitization is controlled based on specifically controlled furnace conditions.

Composites can be synthesized by introducing additional raw materials, leading to highly innovative components such as SiC-coated RGC's.



Application oriented testing

Numerous applications require resiliency under different conditions.

In order to analyze the compaction behavior under different pressure levels and to allow predictions about the stability of the resiliency over time, Superior Graphite has developed a resiliency tester which allows static and dynamic tests.

Supplemental grain size analysis prove that even under high pressure RGC's do not crack.

Resiliency Test Machine

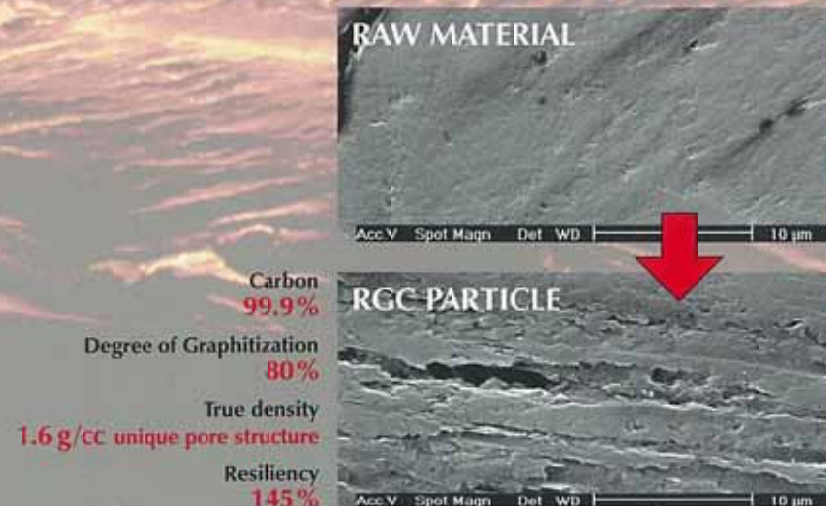


RGC Properties

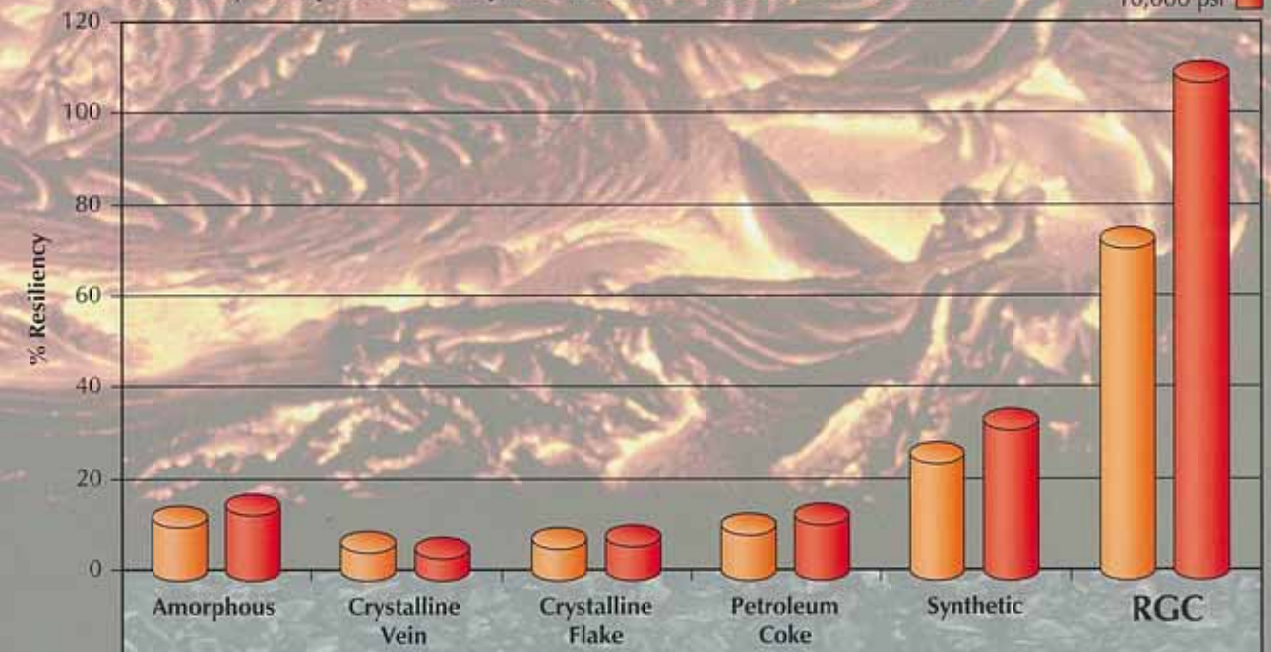
By utilizing raw materials with different secondary properties and various processing parameters different RGC's can be produced.

The process is characterized by dramatic changes in primary and secondary properties.

All RGC grades possess high resiliency and high purity.



Resiliency Comparison - Graphitic Materials at Different Pressures



Key to Innovation

Images by: Professor John C. Crelling, Southern Illinois University



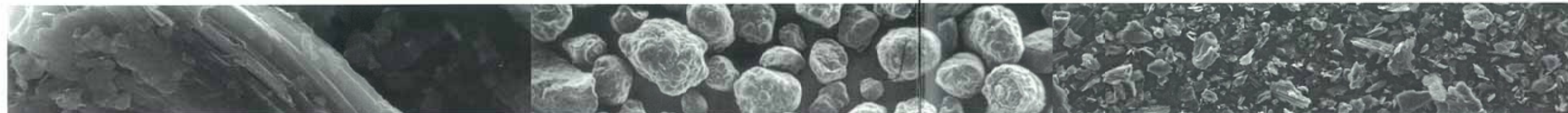
Controlled, Consistent Raw Materials

Quality, consistency and timely availability of the raw materials play a key role in the manufacturing of our high performance carbons. Our Materials Management Team assures not only the optimal supply of raw materials but also evaluates, in unison with development and production, new sources and suppliers on a worldwide basis.

Our dedicated production staff is trained to consistently meet the high quality demands of the marketplace, truck by truck, pallet by pallet, bag by bag. Their special skills and know-how enables them to meet our customer's expectations by being able to provide flexible solutions through a family of high quality, standard or customized, cost effective products.

RGC Materials are available globally, thanks to Superior Graphite Co.'s extensive worldwide distribution network. Our customer service specialists assure that all shipments conform to consistent standards; which assure the right product, in the desired quantity arrive with the correct documentation, at the right time.

- Flexible production and services assure that we can provide tailor-made products and product combinations that are consistent and cost efficient. We recognize the customer as an individual partner with unique requirements.
- Our ISO 9001:2000 certified quality management systems assure that the supply of our graphite and carbon materials will meet agreed-upon specifications at all times.
- Responsibility to the environment is an important factor in the development, sourcing and production of our products.



Grade	Particle Size (US mesh)	Particle Size (mm)	Resiliency @ 10 000 psi	Packaging Available	Possible Applications
RGC01A	95% < 3/8" 5% > 70 US mesh	95% < 9.500 mm 5% > 0.212 mm	>110%	50 LB Bags 25 Kg Bags	Carbon Parts
RGC12A	5% > 4 US mesh 5% < 30 US mesh	5% > 4.750 mm 5% < 0.600 mm	>110%	50 LB Bags 25 Kg Bags	Friction
RGC14A	5% > 18 US mesh 5% < 120 US mesh	5% > 1.000 mm 5% < 0.125 mm	>110%	50 LB Bags 25 Kg Bags	Friction
RGC18A	5% > 20 US mesh 5% < 80 US mesh	5% > 0.850 mm 5% < 0.180 mm	>110%	50 LB Bags 25 Kg Bags	Friction
RGC20A	40-65% < 200 US mesh	40-65% < 0.075 mm	80-110%	50 LB Bags	Carbon Brushes and Parts
RGC26B	98% < 200 US mesh	98% < 0.075 mm	80-110%	50 LB Bags	Carbon Brushes and Parts
RGC33B	98% < 325 US mesh	98% < 0.045 mm	80-110%	50 LB Bags	Polymer Composites
RGC95B	Malvern Laser D50:5 < 10 microns	Malvern Laser D50:5 < 10 microns	<80%	40 LB Bags	Lubricants

