ZOLTEK PX30 HIGH PURITY CARBON FIBER

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ZOLTEK PX30

Designed for use in the most extreme heat applications, ZOLTEK PX30 is an industry leading solution for challenges demanding very high temperature and very harsh chemical resistance properties. As a high purity and high-thermal performance material its various product forms are frequently used for fuel cells, carbon/carbon composites, energy storage battery, and many other specialty applications (outlined in the table below).

Derived from ZOLTEK OX products that undergo a proprietary high temperature batch carbonization process, ZOLTEK PX30 carbon fibers are PAN-based materials carbonized to >99%. Additionally, all ZOLTEK PX30 materials are thermally stable and chemically pure.

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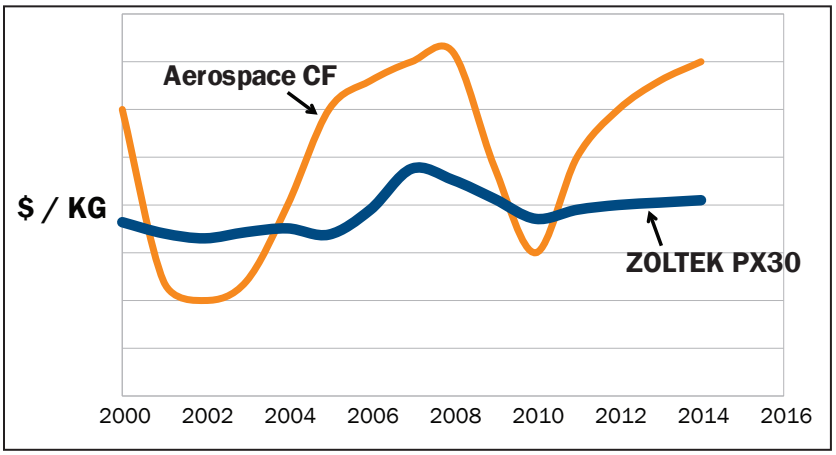
THE ZOLTEK ADVANTAGE

CAPACITY FOR EXPANSION

ZOLTEK has a demonstrated ability to expand at the rate necessary for the commercialization of new applications. With the lowest cost capital investment in the industry, turnkey production expansions happen in as little as six months.



STABLE PRICING STRUCTURE

A unique position in the marketplace ensures price stability needed to sustain customers' operations and growth. ZOLTEK carbon fiber is not dependent on the volatile aerospace industry.

QUALITY AND PERFORMANCE

Commercial carbon fiber has a record of product consistency and reliable performance properties. Employee commitment and ISO, AS, and QS certifications all contribute to ZOLTEK products meeting and exceeding the needs and requirements of customers.

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YARNS

ZOLTEK PX30 carbon fiber yarns are 99% carbonized and have a density of 1.75 g/cc. These yarns are characterized by their many surface fibrils protruding in various directions, making them ideally suited for high performance applications.

IDEALLY SUITED FOR:

- **High Temperature Packings and Gaskets**
- **High Temperature Carbon/ Carbon Composites**

DENIER (G/9000 M)	PLIES	TWIST	TURNS PER INCH	YIELD	
1700	2	S	2.5	5,755 m/kg	2,854 yds/lb
2,500	3	S	3.5	3,545 m/kg	1,758 yds/lb
3,500	4	S	2.5	2,590 m/kg	1,285 yds/lb
4,400	5	S	2.2	2,050 m/kg	1,016 yds/lb
5,000	6	S	2.2	1,780 m/kg	884 yds/lb
6,000	7	S	2.2	1,510 m/kg	750 yds/lb
8,500	10	S	2	1,060 m/kg	527 yds/lb

The properties listed herein do not constitute any warranty or guarantee of values. This information should only be used for the purposes of material selection. Please contact us for more details.

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ROVING

Designed with improved handling characteristics in-mind, ZOLTEK PX30 Roving is manufactured using high twist ZOLTEK OX yarns and the proprietary high temperature batch carbonization process characteristic all of ZOLTEK's high purity ZOLTEK PX30 products. ZOLTEK PX30 Roving is carbonized to >99%.

IDEALLY SUITED FOR:

- **Friction Clutches and Brakes**
- **Composite Substructures**

MATERIAL OVERVIEW	SI	US
Carbon Content	99%	
Density	1.75 g/cc	0.063 lb/in^3
Yield	2,015 m/kg	1,000 yds/lb
Denier	4,465 g/9,000 m	
Twist Direction	S or Z	
Turns Per Inch	1.7	
Oxidation Rate (% per hour) at 932°F (500°C)	1.0	

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FABRIC

ZOLTEK PX30 woven carbon fiber fabrics are made from spun yarn that is tailored for a variety of finished composite thicknesses. These fabrics have high cross-ply tensile and interlaminar shear strengths in composite materials. Another advantage of these fabrics is their ability to conform without wrinkling. ZOLTEK PX30 fabrics are thermally stable and chemically pure with low oxidation rates.

IDEALLY SUITED FOR:

- **Aircraft and Automotive Brakes**
- **Clutch Plates**
- **Gas Diffusion Layer for Fuel Cells**

MATERIAL OVERVIEW	SI	US
Electrical Resistivity	0.0014 ohm-cm	0.00055 ohm-in
Carbon Content	99%	
Density	1.75 g/cc	0.063 lb/in^3
Oxidation Rate	1% per hour at 500°C	1% per hour at 932°F

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MILLED

ZOLTEK PX30 MF High Purity Milled Fibers are 99+% pure carbon fibers derived from ZOLTEK's high temperature batch graphitization process. All ZOLTEK milled products are free of any sizings. ZOLTEK's in-house milling system ensures product quality and traceability from raw material through finished product.

IDEALLY SUITED FOR:

- **Electrically Conductive**
- **Excellent Buoyancy Properties**
- **RFI/EMI Electronic Shielding**

MATERIAL OVERVIEW	SI	US
Carbon Content	99%	
Electrical Resistivity (Volume)	0.0014 Ω/cm	0.00055 Ω/in
Linear Resistivity	0.069 Ω/cm	0.02717 Ω/in
Density	1.75 g/cc	0.063 lb/in^3
Bulk Density	465 g/L (MF150) 350 g/L (MF200)	30.6 lb/ft^3 (MF150) 30.6 lb/ft^3 (MF200)
Fiber Diameter	7.2 µm	0.283 mils
Average Fiber Length	100 µm (MF150) 150 µm (MF200)	4 mils (MF150) 6 mils (MF200)

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GLOBAL FOOTPRINT

ZOLTEK has manufacturing locations producing affordable, quality carbon fiber in Europe, Mexico, and the United States. In 2014, Zoltek joined the Toray Group – a relationship that has advanced the company's technology, strengthened its technical and financial resources, and positioned it for further growth and development as the global leader in carbon fiber.

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ABOUT ZOLTEK

Our objective as a company is to lead the commercialization of carbon fiber as a primary composite building material. It is our goal to help others achieve new levels of performance across a range of products. Carbon fiber reinforced composites are remarkable in their performance characteristics and properties that include high strength, low weight, high stiffness, corrosion resistance, heat resistance, and electrical conductivity.

To learn more, visit www.zoltek.com.