

Global Carbon Fiber for Wind Energy Production, Demand and Key Producers, 2022-2028

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Abstracts

Carbon fiber (CF) is a material consisting of fibers that are 92% or greater carbon. Each CF filament has a diameter on the order of 5 microns to 15 microns. Numerous parallel filaments are typically grouped together into what is referred to as a CF tow. The term tow count refers to the number of filaments per tow and is often expressed with nomenclature such as 24K where the letter K designates the number 1,000. Thus, 24K describes a CF tow having 24,000 filaments. CF having 24,000 or less filaments is referred to as small tow. The most common small-tow product forms are 1K, 3K, 6K, 12K, and 24K tows. Tows having more than 24K filaments are referred to as large tow, with 48K and 50K tows being common large-tow product forms. However, tows with multiple hundreds of thousands filaments are also available. Smalltow material properties, including higher tensile strength and higher modulus when laid or woven into a composite, are superior to large tow and consequently predominately used in industries such as aerospace where high performance is demanded. However, small-tow fibers are more costly than high tow fibers. Another CF classification is by precursor material, which is the multi-element starting material subjected to heat treatment so that nearly all non-carbon atoms are ejected and only carbon remains. Precursor materials include rayon, pitch, and polyacrylonitrile (PAN). The latter, PAN, has more than 96% of the CF market due to its cost-effectiveness and the quality of the fiber produced. Carbon fiber can also be classified as one of three modulus (i.e., a substance's resistance to being deformed elastically when force is applied to it) groups: standard modulus, intermediate modulus, and high modulus as shown in Table 1. Standard modulus CF has 80%–90% of total market today. Carbon fiber cost has strong positive correlation with modulus. Carbon fiber is also classified by tensile strength, which can be loosely correlated with modulus. Table 1 shows that high-modulus and ultra-high-modulus CF can have lower tensile strength than intermediate modulus as strength declines when undergoing the processes required to achieve high- and ultra-high

modulus. Other notable physical properties of carbon fibers include light weight (1.78 grams per cubic centimeter [gm/cc] vs. 8.1 gm/cc for traditional steel), good fatigue resistance and electrical conductivity, chemical inertness, and low coefficient of thermal expansion.

This report studies the global Carbon Fiber for Wind Energy production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for Carbon Fiber for Wind Energy, and provides market size (US\$ million) and Year-over-Year (YoY) Growth, considering 2021 as the base year. This report explores demand trends and competition, as well as details the characteristics of Carbon Fiber for Wind Energy that contribute to its increasing demand across many markets.

The global Carbon Fiber for Wind Energy market size is expected to reach \$ 939.1 million by 2028, rising at a market growth of 5.9% CAGR during the forecast period (2022-2028).

Highlights and key features of the study

Global Carbon Fiber for Wind Energy total production and demand, 2017-2028, (MT)

Global Carbon Fiber for Wind Energy total production value, 2017-2028, (USD Million)

Global Carbon Fiber for Wind Energy production by region & country, production, value, CAGR, 2017-2028, (USD Million) & (MT)

Global Carbon Fiber for Wind Energy consumption by region & country, CAGR, 2017-2028 & (MT)

U.S. VS China: Carbon Fiber for Wind Energy domestic production, consumption, key domestic manufacturers and share

Global Carbon Fiber for Wind Energy production by manufacturer, production, price, value and market share 2017-2022, (USD Million) & (MT)

Global Carbon Fiber for Wind Energy production by Type, production, value, CAGR, 2017-2028, (USD Million) & (MT)

Global Carbon Fiber for Wind Energy production by Application production, value, CAGR, 2017-2028, (USD Million) & (MT)

This reports profiles key players in the global Carbon Fiber for Wind Energy market based on the following parameters – headquarters, production locations, products portfolio, Carbon Fiber for Wind Energy revenue, sales, average price and gross margin, recent developments.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals, COVID-19 and Russia-Ukraine War Influence.

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World Carbon Fiber for Wind Energy market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US\$ Millions), volume (production, consumption) & (MT) and average price (US\$/Kg) by manufacturer, by Type, and by Application. Data is given for the years 2017-2028 by year with 2021 as the base year, 2022 as the estimate year, and 2028 as the forecast year.

Global Carbon Fiber for Wind Energy Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Global Carbon Fiber for Wind Energy Market, Segmentation by Type

48K

24K

Below 12K

Global Carbon Fiber for Wind Energy Market, Segmentation by Application

Onshore Wind Turbine Blades

Offshore Wind Turbine Blades

Companies Profiled:

Toray Industries

SGL Carbon

Tejin

Mitsubishi Chemical

Hexcel

FPC

DowAksa

Zhongfu Shenying

Key Questions Answered

1. How big is the global Carbon Fiber for Wind Energy market?

2. What is the demand of the global Carbon Fiber for Wind Energy market?
3. What is the year over year growth of the global Carbon Fiber for Wind Energy market?
4. What is the production and production value of the global Carbon Fiber for Wind Energy market?
5. Who are the key producers in the global Carbon Fiber for Wind Energy market?
6. What are the growth factors driving the market demand?

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