

Global Silicon Carbide Fibers Market Size Study, By Form (Continuous, Woven), By Usage (Composite, Non-composites), By End Use (Aerospace & Defense, Energy & Power, Industrial), and Regional Forecasts 2022-2032

<https://marketpublishers.com/r/G01B22B641D9EN.html>

Date: January 2025

Pages: 285

Price: US\$ 3,218.00 (Single User License)

ID: G01B22B641D9EN

Abstracts

The Global Silicon Carbide Fibers Market is poised for significant expansion, with an estimated valuation of USD 0.94 billion in 2023 and a remarkable CAGR of 28.1% during the forecast period from 2024 to 2032. Silicon carbide fibers are revolutionizing material engineering due to their superior thermal stability, exceptional strength, and oxidation resistance. These attributes make them indispensable across industries such as aerospace, automotive, and energy, where performance under extreme conditions is critical.

The aerospace and defense sectors are primary growth drivers, leveraging silicon carbide fibers in composites for lightweight, high-strength materials that withstand harsh conditions and elevate fuel efficiency. The increasing production of advanced aircraft, satellites, and spacecraft further accentuates their importance. Additionally, the automotive industry's pursuit of weight reduction to enhance vehicle efficiency and sustainability continues to propel demand.

Technological advancements in manufacturing processes have significantly improved the mechanical properties of silicon carbide fibers, fostering innovation and lowering production costs. Moreover, global emphasis on sustainability and energy efficiency has bolstered adoption across applications like electronics, renewable energy systems, and industrial equipment.

North America dominated the global market in 2024, driven by robust aerospace and

defense industries, substantial R&D investments, and an established manufacturing ecosystem. Meanwhile, Asia Pacific is set to emerge as the fastest-growing region due to rapid industrialization, government initiatives promoting sustainable practices, and growing aerospace and automotive sectors.

Major market players included in this report are:

1. SGL Carbon
2. Toyobo Co., Ltd.
3. CeramTec
4. 3M
5. Nippon Carbon Co., Ltd.
6. H.C. Starck
7. GE Aviation
8. Dow Chemical (Dow Inc.)
9. U.S. Specialty Materials (USSM)
10. Applied Materials
11. NextEra Energy Inc.
12. Advanced Ceramics Manufacturing
13. Composites Horizons LLC
14. American Elements
15. Specialty Materials, Inc.

The detailed segments and sub-segments of the market are explained below:

By Form:

Continuous

Woven

Others

By Usage:

Composite

Non-composites

By End Use:

Aerospace & Defense

Energy & Power

Industrial

Others

By Region:

North America

U.S.

Canada

Mexico

Europe

UK

Germany

France

Asia Pacific

China

Japan

Latin America

Brazil

Middle East & Africa

Years considered for the study are as follows:

Historical Year: 2022

Base Year: 2023

Forecast Period: 2024–2032

Key Takeaways:

Comprehensive market estimates and forecasts spanning a decade.

Regional-level analysis across major segments.

Detailed insights into the competitive landscape, including market share analysis and strategies.

Strategic recommendations for maximizing growth and opportunities.

Contents

CHAPTER 1. GLOBAL SILICON CARBIDE FIBERS MARKET EXECUTIVE SUMMARY

- 1.1. Global Silicon Carbide Fibers Market Size & Forecast (2022-2032)
- 1.2. Regional Summary
- 1.3. Segmental Summary
 - 1.3.1. By Form
 - 1.3.2. By Usage
 - 1.3.3. By End Use
- 1.4. Key Trends
- 1.5. Recession Impact
- 1.6. Analyst Recommendations & Conclusion

CHAPTER 2. GLOBAL SILICON CARBIDE FIBERS MARKET DEFINITION AND RESEARCH ASSUMPTIONS

- 2.1. Research Objective
- 2.2. Market Definition
- 2.3. Research Assumptions
 - 2.3.1. Inclusion & Exclusion
 - 2.3.2. Limitations
 - 2.3.3. Supply Side Analysis
 - 2.3.3.1. Availability
 - 2.3.3.2. Infrastructure
 - 2.3.3.3. Regulatory Environment
 - 2.3.3.4. Market Competition
 - 2.3.3.5. Economic Viability (Consumer's Perspective)
 - 2.3.4. Demand Side Analysis
 - 2.3.4.1. Regulatory Frameworks
 - 2.3.4.2. Technological Advancements
 - 2.3.4.3. Environmental Considerations
 - 2.3.4.4. Consumer Awareness & Acceptance
- 2.4. Estimation Methodology
- 2.5. Years Considered for the Study
- 2.6. Currency Conversion Rates

CHAPTER 3. GLOBAL SILICON CARBIDE FIBERS MARKET DYNAMICS

Global Silicon Carbide Fibers Market Size Study, By Form (Continuous, Woven), By Usage (Composite, Non-composi...

3.1. Market Drivers

- 3.1.1. Advancements in Fiber Manufacturing Technologies
- 3.1.2. Increasing Demand for Lightweight Composites in Aerospace
- 3.1.3. Rising Adoption in Renewable Energy Systems

3.2. Market Challenges

- 3.2.1. High Initial Costs of Production
- 3.2.2. Limited Awareness in Emerging Markets

3.3. Market Opportunities

- 3.3.1. Government Investments in Advanced Material Research
- 3.3.2. Expansion in Electronics and Energy Applications

CHAPTER 4. GLOBAL SILICON CARBIDE FIBERS MARKET INDUSTRY ANALYSIS

4.1. Porter's Five Forces Model

- 4.1.1. Bargaining Power of Suppliers
- 4.1.2. Bargaining Power of Buyers
- 4.1.3. Threat of New Entrants
- 4.1.4. Threat of Substitutes
- 4.1.5. Competitive Rivalry

4.2. PESTEL Analysis

- 4.2.1. Political
- 4.2.2. Economic
- 4.2.3. Social
- 4.2.4. Technological
- 4.2.5. Environmental
- 4.2.6. Legal

4.3. Top Investment Opportunities

4.4. Winning Strategies

4.5. Analyst Recommendations & Conclusion

CHAPTER 5. GLOBAL SILICON CARBIDE FIBERS MARKET SIZE & FORECAST BY FORM (2022-2032)

5.1. Segment Dashboard

5.2. Revenue Trend Analysis (2022 & 2032) (USD Million)

- 5.2.1. Continuous
- 5.2.2. Woven
- 5.2.3. Others

CHAPTER 6. GLOBAL SILICON CARBIDE FIBERS MARKET SIZE & FORECAST BY USAGE (2022-2032)

6.1. Segment Dashboard

6.2. Revenue Trend Analysis (2022 & 2032) (USD Million)

6.2.1. Composite

6.2.2. Non-Composite

CHAPTER 7. GLOBAL SILICON CARBIDE FIBERS MARKET SIZE & FORECAST BY END USE (2022-2032)

7.1. Segment Dashboard

7.2. Revenue Trend Analysis (2022 & 2032) (USD Million)

7.2.1. Aerospace & Defense

7.2.2. Energy & Power

7.2.3. Industrial

7.2.4. Others

CHAPTER 8. GLOBAL SILICON CARBIDE FIBERS MARKET SIZE & FORECAST BY REGION (2022-2032)

8.1. North America Silicon Carbide Fibers Market

8.1.1. U.S.

8.1.2. Canada

8.1.3. Mexico

8.2. Europe Silicon Carbide Fibers Market

8.2.1. UK

8.2.2. Germany

8.2.3. France

8.3. Asia-Pacific Silicon Carbide Fibers Market

8.3.1. China

8.3.2. Japan

8.4. Latin America Silicon Carbide Fibers Market

8.4.1. Brazil

8.5. Middle East & Africa Silicon Carbide Fibers Market

CHAPTER 9. COMPETITIVE INTELLIGENCE

9.1. Key Company SWOT Analysis

9.1.1. SGL Carbon

9.1.2. Toyobo Co., Ltd.

9.1.3. CeramTec

9.2. Competitive Landscape

9.3. Key Strategies & Innovations

CHAPTER 10. RESEARCH PROCESS

10.1. Data Collection Methods

10.2. Data Validation Techniques

10.3. Market Estimation & Forecasting

10.4. Publishing Process

12. LIST OF TABLES

TABLE 1. Silicon Carbide Fibers Market, by Form (2022-2032)

TABLE 2. Silicon Carbide Fibers Market, by Usage (2022-2032)

TABLE 3. Silicon Carbide Fibers Market, by End Use (2022-2032)

TABLE 4. Regional Market Breakdown, by Revenue (2022-2032)

TABLE 5. Competitive Landscape of Key Players (2022 & 2032)

12. LIST OF FIGURES

FIG 1. Global Silicon Carbide Fibers Market Trends (2022-2032)

FIG 2. Market Share Analysis by Region (2022 & 2032)

FIG 3. Competitive Positioning of Key Players

FIG 4. Trends in Aerospace Composites Usage

FIG 5. Silicon Carbide Fibers Market Growth Forecast (2022-2032)

This list is not exhaustive; the final report contains more than 100 tables and 50 figures.

I would like to order

Product name: Global Silicon Carbide Fibers Market Size Study, By Form (Continuous, Woven), By Usage (Composite, Non-composites), By End Use (Aerospace & Defense, Energy & Power, Industrial), and Regional Forecasts 2022-2032

Product link: <https://marketpublishers.com/r/G01B22B641D9EN.html>

Price: US\$ 3,218.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/G01B22B641D9EN.html>