

# Diamond-like Carbon Market Poised for USD 3.6 Billion Milestone by 2031, Bolstered by High Durability and Inertness

*Stringent environmental regulations and increased R&D activities are set to drive the growth of the diamond-like carbon market.*

WILMINGTON, DE, UNITED STATES, December 13, 2024 /

EINPresswire.com/ -- The global [diamond-like carbon industry](#) size stood at US\$ 2.0 billion in 2022. By 2031, the market is estimated to reach US\$ 3.6 billion, expanding at a CAGR of 6.6% during the forecast period.



The hardness of DLC coatings is comparable to that of natural diamonds. The high resistance to abrasion, wear, and friction makes them highly durable. DLC coatings benefit industries like aerospace, automotive, and tooling for harsh conditions.

DLC coatings for electronic components is becoming increasingly common as semiconductor manufacturing grows. DLC coatings enhance electronic component performance while protecting sensitive surfaces. DLC coatings, which can extend component life and reduce the need to replace components frequently, are becoming increasingly popular in industries seeking environmentally friendly solutions.

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The mixed diamond-like carbon (DLC) segment is expected to drive demand for the diamond-like carbon market.

Drill bits and milling cutters will likely drive demand for diamond-like carbon (DLC).

Over the past decade, two-wheelers have gained significant traction across the globe. A strong growth rate is expected in North America and Europe's diamond-like carbon (DLC) industry.

In 2022, Asia Pacific held a significant share of the global market.

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A significant investment is being made in developing coatings and equipment produced with hard carbon by key players in the diamond-like carbon (DLC) market. Vendors are always looking for ways to improve material and design so they can broaden their product portfolio.

- Oerlikon Management AG
- Morgan Advanced Materials
- IBC Coatings Technologies, Ltd.
- Richter Precision Inc.
- Acree Technologies Inc.
- Norseld Pty Ltd.
- Micromatter Technologies Inc.
- Wallwork Heat Treatment Ltd.
- Renishaw plc
- Miba AGGlobal

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A DLC coating reduces friction and provides high conductivity. In addition to providing corrosion resistance, DLC is chemically inert. The material is also used in the manufacture of electronic devices, as well as in chemical processing and medical device manufacturing. In addition to being biocompatible, DLC coatings can be used for medical implants and devices. In addition to being inert, the material has low friction properties, which makes it less likely to cause adverse reactions to the human body.

DLC variants with high thermal conductivity can benefit applications where heat dissipation is crucial. Thermal management of electronic components can be enhanced using DLC coatings, which have this property. In addition to being visible and infrared transparent, certain types of DLC can be used for optical purposes. Among these coatings are those used in telecommunications and imaging industries to protect windows, optical lenses, and sensors.

Regardless of the environment, DLC coatings are resilient, durable in extreme temperatures, under high pressure, and when exposed to abrasives. Compared to components with DLC coatings, DLC-coated components are more wear-resistant and durable, which reduces maintenance needs and downtime. Several industries choose DLC coatings to extend the lifetime of their equipment as a cost-effective solution to reduce operating costs.

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In Asia Pacific, diamond-like carbon is expected to drive market growth. China, South Korea, Japan, and India are among the countries in the Asia-Pacific region that have experienced significant industrial and manufacturing growth. China and India are booming markets for the automotive sector, so demand for DLC is expected to rise.

Asia-Pacific is the largest region for manufacturing electronics and semiconductors. DLC coatings are used in these industries largely for electronic component protection. The electronics industry demand for DLC is expected to increase as technology advances. As medical advancements and healthcare practices increase, DLC will increasingly be used in medical implants and devices. Growing healthcare industries in the Asia-Pacific region may contribute to DLC market expansion.

DLC technology could be developed further through ongoing research and development activities in countries like Japan and South Korea engaged in materials science and surface engineering research. In turn, this can boost market growth. The industry may turn to DLC coatings to help reduce costs and extend component lifespans in an era of environmental regulations and sustainable solutions.

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Pure DLC

Mixed DLC

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Drill Bits & Milling Cutters

Saws & Blades

Dies & Molds

Inserts

Others

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Automotive

Medical

Packaging

Electronics  
Cosmetics  
Others

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North America  
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[Boron Carbide Market](#) - The global boron carbide market was valued at USD 270.7 Mn in 2021 and it is estimated to grow at a CAGR of 4.9 % from 2022 to 2031 and reach USD 431.4 Mn by the end of 2031.

[Smart Fabrics Market](#) - The smart fabrics market was valued at USD 3.3 Bn in 2021 and it is estimated to grow at a CAGR of 19.6 % from 2022 to 2031 and reach USD 21.8 Bn by the end of 2031.

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