

High-performance Ceramic Coatings: Global Markets and Technologies

Market Research Report | 2025-02-27 | 127 pages | BCC Research

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Report description:

Description

Report Scope

This report analyzes the global market for high-performance ceramic coatings by segmenting it based on product type, technology, distribution channel, end use and region. These market segments are analyzed at the global and regional levels. The base year for this analysis is 2023 and market estimates and forecasts are given from 2024 through 2029. The market estimates are provided in terms of revenue (\$ million).

Based on product type, the market is segmented into:

- Oxide
- Carbide
- Nitride
- Others

Based on technology, the market is bifurcated into:

- Thermal spray
- Physical vapor deposition
- Chemical vapor deposition
- Others

Based on the distribution channel, the market is segmented into:

- Original equipment manufacturer (OEM)
- Aftermarket

Based on end use, the market is segmented into:

- Automotive and transportation
- Aerospace

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- Industrial
- Power and energy
- Medical
- Others

Based on region, the market is segmented into:

- North America
- Europe
- Asia-Pacific
- Rest of the World (RoW)

Report Includes

- 45 data tables and 37 additional tables
- Overview and an analysis of key technologies and applications of high-performance ceramic coatings in the Global market
- Analyses of global market trends, with market revenue data for 2023, estimates for 2024, forecast for 2028, and projected CAGRs through 2029
- Estimates of the market size and revenue growth prospects, along with a market share analysis by product type, technology, distribution channel, end-use, and region/country
- Facts and figures pertaining to the market dynamics, technical advances, regulations and the impact of macroeconomic factors
- Insights derived from the Porter's Five Forces model, as well as global supply chain and PESTLE analyses
- An analysis of patents, emerging trends and developments in the industry
- Overview of sustainability trends and ESG developments, with emphasis on consumer attitudes, and the ESG scores and practices of leading companies
- Identification of manufacturers, service providers and suppliers of high-performance ceramic thermal spray, PVD, CVD and other coating techniques; their key offerings, recent developments and impact on product sales
- Analysis of the industry structure, including companies' market shares and rankings, strategic alliances, M&A activity and a venture funding outlook
- Company profiles, including 3M, APS Materials Inc., Bodycote, IGL Coatings, OC Oerlikon Management AG, and Sain-Gobain

Executive Summary

Summary:

The global market for high-performance ceramic coatings is expected to grow from \$10.5 billion in 2024 and is projected to reach \$13.9 billion by the end of 2029, at a compound annual growth rate (CAGR) of 5.8% during the forecast period of 2024 to 2029.

High-performance ceramic coatings offer heat resistance and can withstand extreme temperatures without degrading. These coatings offer chemical resistance, protecting surfaces from harsh substances like oils, solvents, acids and alkaline materials. The coatings are also highly scratch-resistant, providing an added layer of protection against physical wear and tear. Their hydrophobic properties make surfaces water-repellent, preventing water and other liquids from adhering, which also helps reduce the buildup of dirt and grime. Further, high-performance ceramic coatings offer UV protection, preventing fading and degradation caused by exposure to sunlight.

These coatings find applications in a variety of industries, such as automotive, aerospace, electronics and energy and power. In the automotive industry, ceramic coatings are used to protect vehicle exteriors from environmental damage, such as dirt, water and contaminants. In the aerospace sector, high-performance ceramic coatings serve as a critical layer of thermal protection for aircraft and spacecraft components. They are especially valuable for protecting turbine engines, where they can help reduce heat buildup and improve efficiency. Similarly, in the electronics industry, ceramic coatings protect printed circuit boards (PCBs) and other components from heat and moisture, extending the lifespan of electronic devices and improving thermal management in

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devices like computers and smartphones.

Thermal spray technology is preferred because it is versatile and can be used with almost any material composition while offering high density. Thermal spray coatings are particularly valued for their ability to provide protection against oxidation, erosion and corrosion in the automotive, aerospace and energy sectors. On the other hand, physical vapor deposition (PVD) technology is expected to experience substantial growth. PVD is a more energy-efficient method than other coating techniques. The wide range of benefits offered by PVD coating, such as anti-reflective coatings for optics, corrosion resistance for gas turbine blades, decorative coatings for plastics and wear-resistant coatings for machines, is contributing to the market's growing demand.

The high-performance ceramic coatings market for the automotive and transportation segment is projected to experience significant growth during the forecast period. This growth is primarily driven by consumer emphasis on enhancing vehicle aesthetics. Ceramic coatings, which deliver a glossy finish and improve the visual appeal of a vehicle's exterior, are seeing a surge in demand. The expanding automotive industry, coupled with rising demand for electric vehicles, is expected to fuel segment growth.

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ELEMENT 119
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KERONITE
NANOSHINE GROUP CORP.
OC OERLIKON MANAGEMENT AG
SAINT-GOBAIN
SWAINTECH COATINGS INC.
ULTRAMET

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