

Thermal Barrier Coatings - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Thermal Barrier Coatings Market size is estimated at USD 1.21 billion in 2025, and is expected to reach USD 1.49 billion by 2030, at a CAGR of 4.31% during the forecast period (2025-2030).

COVID-19 negatively impacted the market in 2020 due to the unfavorable macroeconomics and operational restrictions across major end users of these coatings pushed back the demand during this period. However, the market is now estimated to reach pre-pandemic levels and is expected to grow steadily.

Key Highlights

- The shift from coal to natural gas-fired power generation and increasing demand from the aerospace sector are expected to drive demand for the thermal barrier coatings market.
- On the flip side, volatile raw material prices are expected to restrain demand in the market studied.
- The technological advancements in various end-user markets will likely provide new growth avenues for the market studied during the forecast period.
- North America dominated the global market. However, Asia-Pacific will likely witness the highest growth rate during the forecast period.

Thermal Barrier Coatings Market Trends

Aerospace Sector to Dominate the Market

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- Thermal barrier coatings are commonly used to protect nickel-based superalloys from melting and thermal cycling in aviation turbines combined with cool airflow.
- Thermal barrier coatings increase the allowable gas temperature above the superalloy melting point. They reduce the temperature of the blade alloy and protect against oxidation and hot corrosion from high-temperature gas, thus increasing turbine performance, life expectancy, and efficiency.
- The increasing aircraft fleet and the rising defense expenditure increased aircraft production worldwide, creating immense demand for coatings like TBCs to protect engines and turbines.
- According to the data released by the Aeronautical Repair Station Association, the global aircraft fleet is expected to expand rapidly in the coming decade. It is expected to reach 38,100 aircraft by 2032 from 28,000 in 2023.
- According to the Boeing Commercial Outlook 2022-2041, the worldwide aerospace services industry is predicted to reach over USD 3.6 trillion, with the United States and Canada accounting for almost 30% of the market. Europe follows it with 23.5%, which will likely boost the demand for the studied market in the coming years.
- Furthermore, according to the Boeing Commercial Outlook 2022-2041, in China, around 8,485 new deliveries will be made by 2041 with a market service value of USD 545 billion. Thus, boosting the market growth.
- Overall, the market for thermal barrier coatings in the aerospace industry is expected to recover gradually through the forecast period and grow consistently.

North American Region to Dominate the Market

- The North American region is dominating the thermal barrier coatings market, owing to the significant demand from various end-user industries such as aerospace, automotive, power, and oil and gas.
- Moreover, the United States includes the largest share of the market studied. Besides the United States, Canada and Mexico contain a sizeable share of the market for thermal barrier coatings.
- Strong exports of aerospace components to countries such as France, China, and Germany, along with robust consumer spending in the United States, are driving the manufacturing activities in the aerospace industry. It can induce positive momentum for the market.
- In North America, according to the Boeing Commercial Outlook 2022-2041, the total deliveries of new airplanes will account for 9,310 units by 2041, with a market service value of USD 1,045 billion.
- According to the OICA, automotive production in North America in 2022 accounted for 17,756,263 units, an increase of 10% compared to the production in 2021, which was reported to be 16,190,835 units. Additionally, in North America, Over 10.06 million vehicles manufactured in 2022 were produced in the United States.
- Major countries in the North American region continued to get affected by the semiconductor microchip shortage and additional supply chain disruptions. For instance, According to the National Automobile Dealers Association (NADA), Light vehicle sales in 2022 recorded the lowest full-year sales in 2022 since 2011. They experienced an 8.2% annual decline compared to light vehicle sales in 2021.
- Hence, all the factors above are expected to significantly impact the demand for the thermal barrier coatings market in the region over the forecast period.

Thermal Barrier Coatings Industry Overview

The thermal barrier coatings market is fragmented in nature. Some of the major players in the market (not in any particular order) include Honeywell International Inc., OC Oerlikon Management AG, Praxair ST Technology, Inc., Chromalloy Gas Turbine LLC, and Saint-Gobain, among others.

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Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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