Thermal Spray - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

Market Report | 2024-02-17 | 350 pages | Mordor Intelligence

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Report description:

The Thermal Spray Market size is estimated at USD 11.37 billion in 2024, and is expected to reach USD 13.98 billion by 2029, growing at a CAGR of 4.22% during the forecast period (2024-2029).

The market was negatively affected by the COVID-19 pandemic in 2020. The lockdown disrupted manufacturing activities and supply chains, and many scheduled projects were changed or postponed. However, the sector has been recovering since restrictions were lifted owing to the rising demand from various end-use industries, such as aerospace, turbines, automotive, electronics, oil and gas, medical devices, etc.

Key Highlights
-Over the short term, the increasing usage of thermal spray coatings in medical devices, the rising popularity of thermal spray ceramic coatings, the replacement of hard chrome coatings, and the rising use of thermal spray coatings in the aerospace industry are some factors driving the market demand.
-However, issues regarding process reliability and consistency and the emergence of hard trivalent chrome coatings in recent years may hinder the market's growth.
-Advancements in spraying technology (cold spray process), recycling of thermal spray processing materials, and increasing demand from the oil and gas industry will likely create lucrative growth opportunities for the market in the coming years.
-The Asia-Pacific region is expected to dominate the market and is also likely to witness the highest CAGR during the forecast period.

Thermal Spray Market Trends

Increasing Usage in the Aerospace Industry

- The aerospace industry is the largest end-user of the thermal spray material market. Thermal spray coatings are used in the aerospace industry to protect components from extreme temperatures and pressures during flight.
- In addition to providing high thermal resistance and longevity, they are designed to protect engine turbine blades and actuation systems. Thermal sprays are primarily employed in jet engine components, such as crankshafts, piston rings, cylinders, valves, etc. Additionally, they are used in coating landing gear (bearings and axles inside landing gear) to withstand forces during landing and takeoff.
- Apart from enhanced service life, thermal spray coatings offer improved fuel efficiency, reduced maintenance cost, and higher speed in aircraft and rotorcraft engines and related components.
- As per the Japan Aircraft Development Corporation data, the number of Boeing aircraft added to the global aircraft fleet was 340 units in 2021, compared to 157 units in 2020.
- In the Asian-Pacific region (excluding China), according to the Boeing Commercial Outlook 2021-2040, around 8,945 new deliveries may be made by 2040, with a market service value of USD 1,945 billion. Moreover, around 8,700 new deliveries may be made in China alone by 2040, with a market service value of USD 1,800 billion.
- Additionally, South Korea is one of the largest markets for the US aerospace industry. The Korean government plans to invest USD 17 billion in the KF-X program until 2025. In November 2018, the domestic airline, Jeju Air, ordered forty 737 MAX 8 airplanes worth USD 4.4 billion. The orders are projected to be completed between 2022 and 2026.
- According to the Federal Aviation Administration (FAA), the United States' total commercial aircraft fleet is expected to reach 8,270 in 2037 due to air cargo growth. Also, the United States mainliner carrier fleet is expected to grow at a rate of 54 aircraft per year due to the age of the existing fleet.
- The German aerospace industry includes more than 2,300 firms across the country, with northern Germany recording the highest concentration of firms. The country hosts many aircraft interior components and materials production bases, mainly in Bavaria, Bremen, Baden-Wurttemberg, and Mecklenburg-Vorpommern.
- The above factors are expected to support the consumption of thermal spray in the aerospace industry during the forecast period.

Asia-Pacific Region to Dominate the Market

- In the Asia-Pacific region, China is the largest economy in terms of GDP. China and India are among the fastest-growing economies in the world.
- According to the Civil Aviation Administration of China (CAAC), China is one of the largest aircraft manufacturers and markets for domestic air passengers. Moreover, the aircraft parts and assembly manufacturing sector has been growing rapidly, with over 200 small aircraft parts manufacturers. Moreover, Chinese airline companies are planning to purchase about 7,690 new aircraft in the next 20 years, valued at approximately USD 1.2 trillion, which is further expected to raise the market demand for the thermal spray market.
- China is the largest base for electronics production in the world. China is actively engaged in the manufacturing of electronic products, such as smartphones, TVs, wires, cables, portable computing devices, gaming systems, and other personal electronic devices. In 2021, an increment of nearly 11.4% was witnessed in the export value of Chinese electronics products with respect to the previous year. The revenues of major manufacturers expanded by 16.2% on a year-on-year basis due to the consistent demand from the international market.
- China is the largest producer of crude steel globally. According to the World Steel Association, in 2021, China accounted for more than 50% of global production. In 2021, the country's annual production capacity of crude steel stood at 1,032.8 million tons,

declining by 3% compared to 1064.7 million tons produced in 2020 due to some policy changes. the country still reminas the largest steel producer globally.
- The automotive industry in India is an important indicator of how well the Indian economy is performing, as this sector plays a vital role in both technological advancements and macroeconomic expansion. In 2021, the Indian passenger car market was valued at USD 32.70 billion, and it is likely to reach a value of USD 54.84 billion by 2027, registering a CAGR of more than 9% between 2022-2027, according to IBEF (Indian Brand Equity Foundation).
- The electrical and electronics industry in Japan is one of the world's leading industries. The country is a world leader in terms of the production of computers, gaming stations, cell phones, and various other key computer components. Consumer electronics account for one-third of the Japanese economic output. According to the data released by the Japan Electronics and Information Technology Industries Association (JEITA), in 2021, the total production value of the electronics industry in Japan amounted to around JPY 10,954,346 million showcasing a rise of nearly 10% from the previous year.
- Owing to the rise of these end-user industries in the United States and Canada, North America is projected to dominate the market during the forecast period.

Thermal Spray Industry Overview

The global thermal spray market is fragmented in nature. Some of the major players in the market include OC Oerlikon Management AG, Linde plc, Chromalloy Gas Turbine LLC, Bodycote, and Kennametal Inc., among others (not in any particular order).

Additional Benefits:

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

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