

# Thermal Spray Powders Market Size, Share & Trends Analysis Report By Material (Ceramic Powders, Metal & Alloy Powders, Carbides), By End-use (Aerospace, Automotive, Energy & Power, Oil & Gas, Industrial), By Region, And Segment Forecasts, 2026 - 2033

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## Abstracts

The global thermal spray powders market size was estimated at USD 4.0 billion in 2025 and is projected to reach USD 5.8 billion by 2033, growing at a CAGR of 5.1% from 2026 to 2033. The market growth is driven by the superior physical properties of thermal spray powders, including high compressive strength, corrosion resistance, and thermal stability, which enable their widespread adoption across multiple industrial applications.

The thermal spray powders market is increasingly aligned with sustainability objectives, particularly through component life extension and reduced material waste in high-value industries. A relevant real-world instance is the GE Aviation use of advanced thermal spray repair processes for aircraft engine components, which has been widely applied across its MRO programs to restore turbine parts instead of replacing them, thereby reducing material consumption and lifecycle emissions. In 2023, GE highlighted the continued expansion of its component repair technologies within its global maintenance operations, reinforcing the role of coating-based refurbishment in supporting circular economy practices in aviation maintenance ecosystems.

Technological innovation in thermal spray powders is being driven by the increasing adoption of advanced coating processes such as high-velocity oxygen fuel (HVOF) and cold spray systems, which improve coating density and performance characteristics. A relevant industrial instance is the NASA Glenn Research Center's continued development and demonstration of cold spray additive repair technologies for aerospace structures, including metallic component restoration without melting the

feedstock material. In 2024, NASA publicly documented expanded application of cold spray techniques for structural repair and surface enhancement of metallic aerospace components, highlighting improved bonding strength and reduced thermal degradation compared to conventional spray methods.

## Global Thermal Spray Powders Market Report Segmentation

This report forecasts revenue growth at the global, country, and regional levels and provides an analysis of the latest trends in each of the sub-segments from 2021 to 2033. For this study, Grand View Research has segmented the global thermal spray powders market report by material, end-use, and region.

### Material Outlook (Revenue, USD Million, 2021 - 2033)

Ceramic Powders

Metal & Alloy Powders

Carbides

Others

### End-use Outlook (Revenue, USD Million, 2021 - 2033)

Aerospace

Automotive

Energy & Power

Oil & Gas

Industrial

Others

### Regional Outlook (Revenue, USD Million, 2021 - 2033)

North America

U.S.

Canada

Mexico

Europe

Germany

France

UK

Italy

Asia Pacific

China

India

Japan

Latin America

Brazil

Middle East & Africa

Saudi Arabia

UAE

South Africa

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*Thermal Spray Powders Market Size, Share & Trends Analysis Report By Material (Ceramic Powders, Metal & Alloy...*

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