

Investment Casting Market Growth: From US\$ 16.9 Billion in 2023 to US\$ 33.9 Billion by 2034 - TMR Study

Investment Casting Market to Reach US\$ 33.9 Bn by 2034, Growing at a 6.5% CAGR from US\$ 16.9 Bn in 2023

WILMINGTON, DE, UNITED STATES, December 20, 2024 / EINPresswire.com/ -- The global investment casting market was valued at US\$ 16.9 billion in 2023 and is projected to grow at a compound annual growth rate (CAGR) of 6.5% from 2024 to 2034, reaching a value of US\$ 33.9 billion by the end of 2034.



Investment Casting Market

This growth trajectory is driven by the rising demand for precision components across various industries, including aerospace, defense, automotive, and energy.

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Investment Casting Market Outlook 2034: Valued at US\$ 16.9 Bn in 2023, the market is estimated to grow at a CAGR of 6.5%, reaching US\$ 33.9 Bn by 2034"

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Analyst Viewpoint

The investment casting industry is experiencing robust growth due to its pivotal role in producing high-precision, temperature-sensitive components. These are critical in sectors such as aerospace and defense, particularly for jet engines and industrial gas turbines. Additionally, the integration of additive manufacturing, often referred to as

Rapid Investment Casting (RIC), is revolutionizing traditional casting methods, making them more cost-effective and time-efficient.

Market Drivers

Growth in Aerospace & Defense Sector

Investment casting is extensively used in the aerospace and defense industry for producing components like turbine blades and engine parts. The ability to produce complex geometries with superior material properties makes investment casting an ideal choice for high-performance applications. For example, in 2023, Safran announced plans to establish a maintenance repair and overhaul (MRO) facility for LEAP commercial aircraft engines in India, highlighting the growing demand for investment casting in aerospace applications.

Integration of Additive Manufacturing

The adoption of additive manufacturing technologies in investment casting is significantly boosting market growth. Rapid Investment Casting (RIC) eliminates traditional pattern-making processes, reducing production time and costs. For instance, in 2024, GE Aerospace announced a US\$ 650 million investment in its global manufacturing plants to enhance production capabilities, including scaling up 3D printing-enabled LEAP engines.

Material Insights

Investment casting employs a variety of materials, including ferrous and non-ferrous alloys. Key materials used include:

- Ferrous Alloys: Carbon steel, stainless steel, alloy steel, and tool steel.
- Non-ferrous Alloys: Aluminum, copper, nickel alloys, titanium, and magnesium.

Mid-carbon steel is valued for its ductility and wear resistance, while non-ferrous alloys like aluminum and titanium are preferred for their lightweight and corrosion-resistant properties.

Key Applications

Investment casting finds applications across diverse industries, including:

- Turbine Blades
- Engine Components
- Suspension Components
- Medical Equipment
- Pump Components and Valves
- Firearm Components
- Ship Propellers

The aerospace and defense sector remains a dominant end-use industry due to the increasing demand for lightweight, high-strength components.

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Regional Analysis

Asia Pacific

Asia Pacific emerged as the leading region in 2023, driven by significant investments in aerospace, automotive, and marine industries. For example, Indian companies like Bharat Heavy Electricals Limited (BHEL) and Bharat Forge are developing marine gas turbines tailored to the needs of the Indian Navy. Additionally, the growth of the automotive sector in India, which produced over 25 million vehicles in 2022-2023, further bolsters the regional market.

North America and Europe

North America and Europe are also key markets, with established players focusing on advanced manufacturing technologies. Investments in digital foundries and the integration of 3D printing technologies are enabling manufacturers to produce high-value turbine parts efficiently.

Competitive Landscape

Key players in the investment casting market include:

- Gujarat Precision Cast Pvt. Ltd.
- Impro Precision Industries Limited
- IPCL
- Kovatch Castings
- MetalTek
- · Milwaukee Precision Casting
- Niagara Investment Castings Ltd.
- Precision Castparts Corp.
- · Redstone Manufacturing

Notable Developments

- Texmo Precision Castings: Acquired a 75.1% stake in Feinguss Blank in 2023 to expand its global footprint.
- 3DCERAM Sinto and Avignon Ceramic: Formed a joint venture, U3DC, to provide precision foundry solutions using 3D-printed ceramic cores.

Market Segmentation

By Material Type

- Ferrous Alloys (e.g., Carbon Steel, Stainless Steel)
- Non-ferrous Alloys (e.g., Aluminum, Copper, Nickel Alloys, Titanium)

By Application

- Turbine Blades
- Airfoils
- Engine Components
- Medical Equipment
- Pump Components

By End-use Industry

- Aerospace & Defense
- Automotive
- Industrial Machinery
- Medical
- Energy
- Oil & Gas
- Marine

Market Snapshot

- Market Size in 2023: US\$ 16.9 billion
- Forecasted Market Size in 2034: US\$ 33.9 billion
- CAGR (2024-2034): 6.5%

Conclusion

The investment casting market is poised for significant growth over the next decade, driven by advancements in aerospace and defense applications and the integration of additive manufacturing. As industries demand higher precision and performance, the adoption of innovative casting technologies will continue to shape the market dynamics, offering lucrative opportunities for manufacturers worldwide.

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Contact:

Transparency Market Research Inc.
CORPORATE HEADQUARTER DOWNTOWN,
1000 N. West Street,
Suite 1200, Wilmington, Delaware 19801 USA

Tel: +1-518-618-1030

USA - Canada Toll Free: 866-552-3453

Website: https://www.transparencymarketresearch.com

Email: sales@transparencymarketresearch.com Follow Us: LinkedIn| Twitter| Blog | YouTube

Atil Chaudhari Transparency Market Research Inc. +1 518-618-1030 email us here

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