Aluminum Casting Market By Process (Die casting, Sand Casting, Permanent Mold Casting), By End-user (Building and Construction, Industrial, Transportation, Others): Global Opportunity Analysis and Industry Forecast, 2023-2032

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Report description:

The aluminum casting market valued for $72.9 billion in 2022 and is estimated to reach $124.8 billion by 2032, exhibiting a CAGR of 5.6% from 2023 to 2032.

Aluminum casting is a process that involves pouring molten aluminum into a mold to create a 3D metal part. The mold contains a hollow cavity of a desired geometrical shape, and the molten aluminum is allowed to cool down to form a solidified part. Metals such as cast iron, stainless steel, manganese, aluminum, and others are widely used for aluminum casting process. It is employed in various end use sectors including automotive, electrical and electronics, building and construction, heavy machinery and equipment, aerospace, and others.??

Factors such as increase in disposable income, technological upgrades, and spurring rise in number of original equipment manufacturers (OEMs) have led the automotive & transportation sector to witness a significant growth. For instance, according to a report published by India Brands Equity Foundation, the domestic automobile production increased by a CAGR of 2.36% from 2016-20 with 26.36 million vehicles being manufactured in India in 2020. The surge in fuel processing has led the key automotive manufacturers such as Maruti Suzuki and Hyundai others to produce lightweight vehicles to enhance fuel mileage.

Aluminum castings provide a favorable combination and balance of properties such as ductility, formability, strain hardening, and strength level parameters. These significant properties enable reducing the weight of vehicles and at the same time improves resistance against the effects of corrosion. This factor has led the automotive & transportation sectors to increasingly use aluminum castings. This is expected to fuel the demand for aluminum castings in the growing automotive & transportation sector during the forecast period.?

Furthermore, both developed and developing economies, such as the U.S., China, India, and others have put more emphasis on producing high tech aircrafts equipped with modern armor facilities wherein sand castings are used for producing aircraft pistons, bearings, and other aircraft parts. This factor may act as one of the key drivers responsible for the growth of the manganese alloy

market. Furthermore, the increase in demand for consumer goods surged the shipment activities which in turn has surged the manufacturing of cargo ships where aluminum casting is widely used for manufacturing lightweight ship components. This may augment the growth of the aluminum casting market during the forecast period.

However, aluminum casting involves several processes such as melting of metal, transferring the molten metal to mold cavity, and solidification of molten metal. These processes require a relatively large amount of heat energy. Furthermore, the overall process consists of different sophisticated equipment that are fabricated to work at high temperature application. These factors make aluminum casting an expensive process which in turn may restrain manufacturers with less investment potential to enter into aluminum casting market. Thus, high investment costs associated with the production of aluminum castings may hamper the market growth during the forecast period.

On the contrary, rapid technological advancements coupled with the emergence of artificial intelligence (AI), internet of things (IOT), and machine learning (ML) technologies have surged the demand for various consumer electronic devices. Aluminum casting solutions are widely used in electronics sector for producing three-dimensional parts. Furthermore, key electronic manufacturers are using aluminum casting owing to its advantages such as quick yield of complexes, preciseness, and production of rigid casts parts with smooth surfaces that don't need intense secondary machining. These factors have surged the popularity of aluminum castings in the growing electronics sector. In addition to this, the emergence of rapid metal casting process offers numerous advantages to the manufacturers such as high dimensional accuracy, increased production capacities, and rapid prototyping. These factors have made electronic products manufacturers become more linear toward using aluminum casting process; thus, creating lucrative opportunities for the market.

The aluminum casting market is segmented on the basis of process, end user, and region. On the basis of process, the market is categorized into die casting, sand casting, and permanent mold casting. As per end user, it is divided into transportation, industrial, building & construction, and others. Region-wise, the market is studied across North America, Europe, Asia-Pacific, and LAMEA.

The global aluminum casting market profiles leading players that include Alcoa Corporation, Bodine Aluminum, BUVO Castings, Consolidated Metco, Inc., Dynacast, Rio Tinto, RusAL, RYOBI Aluminium Casting (UK) Ltd., Shandong Xinanrui Casting, and Walbro.?The global aluminum casting market report provides in-depth competitive analysis as well as profiles of these major players.

Key Benefits For Stakeholders

-This report provides a quantitative analysis of the market segments, current trends, estimations, and dynamics of the aluminum casting market analysis from 2022 to 2032 to identify the prevailing aluminum casting market opportunities.

-The market research is offered along with information related to key drivers, restraints, and opportunities.

-Porter's five forces analysis highlights the potency of buyers and suppliers to enable stakeholders make profit-oriented business decisions and strengthen their supplier-buyer network.

-In-depth analysis of the aluminum casting market segmentation assists to determine the prevailing market opportunities.

-Major countries in each region are mapped according to their revenue contribution to the global market.

-Market player positioning facilitates benchmarking and provides a clear understanding of the present position of the market players.

-The report includes the analysis of the regional as well as global aluminum casting market trends, key players, market segments, application areas, and market growth strategies.

Key Market Segments

By Process

- Die casting
- Sand Casting
- Permanent Mold Casting

By End-user

- Industrial
- Transportation
- Others

- Building and Construction
By Region
- North America
- U.S.
- Canada
- Mexico
- Europe
- Germany
- UK
- France
- Spain
- Italy
- Rest of Europe
- Asia-Pacific
- China
- India
- Japan
- South Korea
- Australia
- Rest of Asia-Pacific
- LAMEA
- Brazil
- Saudi Arabia
- South Africa
- Rest of LAMEA
- Key Market Players
- Alcoa Corporation
- Bodine Aluminum
- BUVO Castings
- Consolidated Metco, Inc.
- Dynacast
- Rio Tinto
- RusAL
- RYOBI Aluminium Casting (UK) Ltd.
- Shandong Xinanrui Casting
- Walbro

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