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Calcined Bauxite Market Research Report—Global Forecast till 2030

Report / Search Code: MRFR/CnM/9196-CR **Publish Date:** September, 2021

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Price	1-user PDF : $ 4950.0	Enterprise PDF : $ 7250.0

Description:

Calcined Bauxite Market Overview

The global calcined bauxite market is projected to register a CAGR of over 5.15% toreach around USD 2,159million by the end of 2028.

Calcined bauxite is produced by sintering high alumina bauxite at temperatures between 1,600 to 1,800°C. The calcination process removes moisture and impurities from bauxite and helps in increasing the alumina content, grain hardness, and refractoriness of the bauxite ore. This results in calcined bauxite being an ideal material used in the production of various types of refractory materials. This is attributed to its ability to withstand extremely high temperatures and corrosive environments prevailing inside the blast furnaces. On the other hand, its use in the production of a variety of abrasives owing to its grain hardness and angular shape.

The prime factordriving the growth of the global calcined bauxite market is its extensive use for brown fused alumina, further used for the production of refractory materials. Calcined bauxite, anthracite, iron filings, and additives are mixed in specific proportions and heated together at about 2,250°C temperature to produce brown fused alumina. Brown fused alumina is an extremely hard material with high bulk density and a nineon the Mohs scale of mineral hardness. The growing use of high alumina refractories in the steel production process is likely to fuel the calcined bauxite market over the forecast period. Moreover, extensive use of brown fused alumina in the production of abrasives is projected to provide an additional boost to the product demand.

The consistent particle size and angular shape of brown fused alumina makeit an ideal choice of raw material for the production of various types of abrasives such as grinding wheels, sandpaper, and blasting media. Thus, growing demand for abrasives is anticipated to positively impact the demand for brown fused alumina and calcined bauxite over the forecast period.In addition, brown fused alumina is widely used to produce a wide range of refractory materials because of its corrosion and thermal resistance. Brown fused alumina refractories are highly preferred in the steelmaking industry to line blast furnaces. These refractories provide thermal protection to furnace structures to help maintain their structural integrity at extremely high temperatures.

Another key driver of the global calcined bauxite market is its use in the production of calcium aluminate cement. Calcium aluminate cement is a special type of hydraulic cement produced by sintering high-purity limestone and calcined bauxite in a rotary kiln. Depending on the alumina and iron oxide contents, calcium aluminate cement is categorized into low purity, intermediate purity, and high purity cement. Unlike Portland cement, calcium aluminate cement withstands extremely high temperatures and corrosive environments. The concrete made using calcium aluminate cement exhibits significantly lower porosity and superior chemical resistance and abrasion properties. Thus, this concrete is witnessing high adoption in industrial flooring applications. Moreover, calcium aluminate cements mortars are also used to line the steel pipes that carry municipal sewage and industrial wastewaters.

However, environmental concerns associated with bauxite mining activities act as a restraint for market growth. For instance, in major countries, bauxite mining activities are allowed only after conducting detailed environmental impact studies and assessing the local pollution mitigation initiatives undertaken by the mining firms.

COVID Impact Analysis

Major economies across Europe and North America were severely affected by the outbreak of the COVID-19 pandemic and witnessed a rapid increase in death toll during the first and second waves. Europe witnessed a repeated implementation of lockdown strategies to control the virus spread and safeguard human lives. Restrictions on people’s movements led to a drastic drop in demand for discretionary consumption articles such as automobiles. This contributed to a significant decrease in demand for abrasives and refractories and,subsequently, the calcined bauxite during the pandemic. However, the rapid pace of vaccination and various monetary measures undertaken to reboot the economic activities are expected to normalize the demand for calcined bauxite in 2021.

Major calcined bauxite manufacturers in North America and Europe heavily depend on China, India, and Guinea for bauxite imports. However, disruption in shipping networks created an acute shortage of bauxite in the market, increasing input costs for calcined bauxite manufacturers.China and Guyana are two of the largest exporters of calcined bauxite in the world. The outbreak of the COVID-19 pandemic and subsequent implementation of lockdown strategies in these countries affected the logistics networks and, thereby, the supply of calcined bauxite to the world. Moreover, in Europe and North America, the severe infection rates limited led implementation of stringent sanitary and quarantine rules to check the virus spread.

Supply Chain Analysis

The supply chain analysis evaluates every stage and step taken by stakeholders involved throughout the production and distribution of calcined bauxite. The supply chain includes raw materials and suppliers, calcined bauxite producers, distribution channels, and end-use industries.

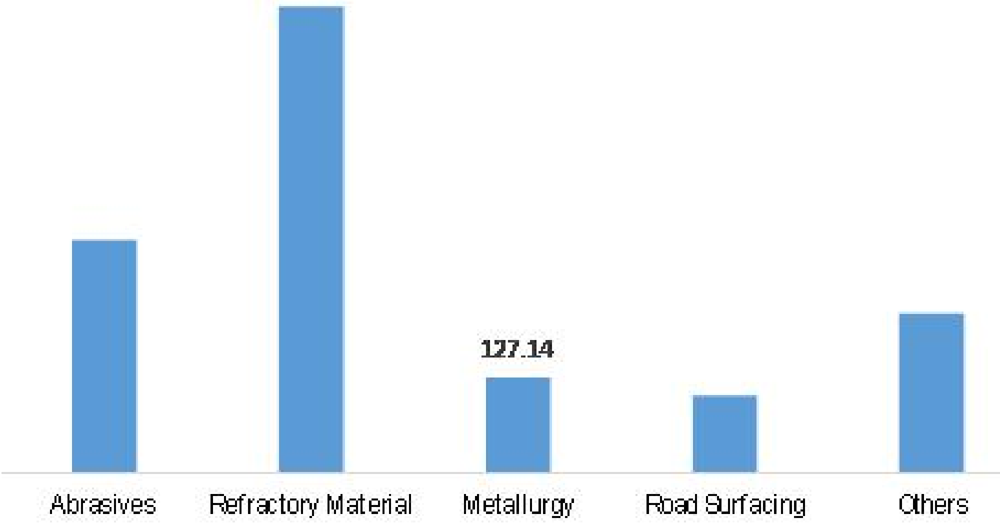
Bauxite is the primary raw material employed in the production of brown calcined bauxite.The distribution channel in this market comprises distributors, wholesalers, and e-commerce merchants. Some major bauxite and coal mining companies include BHP Billiton, Alcoa, Aluminium Corporation of China, Vale, Rio Tinto, Coal India Limited, ShenHua Group, SUEK, and National Aluminium Company (Nalco).

Segmentation

The global calcined bauxite market has been segmented on the basis of purity, application, and region.

By purity, the calcined bauxite market has been segmented into high purity (>85%) and low purity (<85%).The high purity (>85%) segment dominated the market with a 78.06% share of the global calcined bauxite market in 2020 and is expected to register a CAGR of 5.46% during the forecast period.

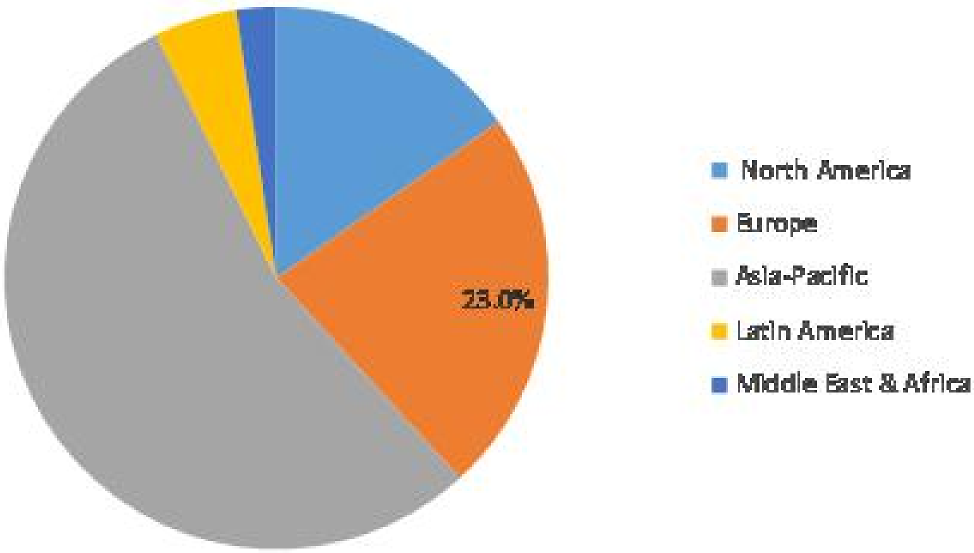
Global Calcined Bauxite Market Revenue, by Application, 2020 (USD Million)



Sources: MRFR Analysis

On the basis of application, the global calcined bauxite market is segmented into abrasives, refractory materials, metallurgy, road surfacing, and others. Among these, the metallurgy segment was valued at USD 127.14 million in 2020 and is expected to grow significantly during the assessment period.

Global Calcined Bauxite Market Share, by Region, 2020 (%)



Sources: MRFR Analysis

Regional Analysis

The global calcined Bauxite Market has been studied across Asia-Pacific, North America, Europe, Latin America, and the Middle East & Africa. Asia-Pacific emerged as the leading and fastest-growing segment on account of the largest bauxite ore reserves in countries such as India, China, and Australia. In 2019, Australia remained the largest producer of bauxite at 105 metric tonnes, followed by China and India. In addition to this, lower labor costs coupled with higher manpower in the Asia-Pacific region promote market growth. Widespread use of refractories in end-use industries such as iron and steel, cement & ceramics, non-ferrous metals, and others is a major driver of the regional market growth. Growing infrastructure in emerging countries such as India, Thailand, and South Korea coupled with the rising demand for refractories from the iron & steel industry is the prime factor driving the market in upcoming years.

North America is expected to have a significant share in the global market owing to the high demand for metal abrasives and alumina products. Growing automotive, metal fabrication, machinery, electronics, electrical, medical, and construction industries in the US contribute to the growth of the abrasives market. In the automotive industry, abrasives are used for various applications, such as coarse and lacquer sanding, which will drive the demand for calcined bauxite in abrasives production.

Key Players

Great Lakes Minerals, LLC(US), LKAB (Sweden), EK-COMPANY AG (Germany), Bosai Group (China), First Bauxite LLC (US), Boud Minerals Limited (UK), Saurashtra Calcine Bauxite & Allied Industries Ltd (India), and Sinocean Industrial Limited (China) are the prominent players operating in the global calcined bauxite market.

The global market remains moderately fragmented, with LKAB, Bosai Group, SCABAL, and Sinocean as leading players accounting for a larger share of the global market. This is because these companies have a large manufacturing base, a global sales network, a vast product portfolio, and a brand image.

Market Segmentation

Global Calcined Bauxite Market, by Purity

- High Purity
- Low Purity

Global Calcined Bauxite Market, by Application

- Abrasives
- Refractory Materials
- Metallurgy
- Road Surfacing
- Others

Global Calcined Bauxite Market, by Region

- North America
    - US
    - Canada
- Europe
    - Germany
    - France
    - UK
    - Italy
    - Russia
    - Spain
    - Netherlands
    - Rest of Europe
- Asia-Pacific
    - China
    - Japan
    - India
    - South Korea
    - Australia & New Zealand
    - Rest of Asia-Pacific
- Latin America
    - Mexico
    - Brazil
    - Argentina
    - Rest of Latin America
- Middle East & Africa

- Turkey
- GCC Countries
- South Africa
- Rest of the Middle East& Africa

Available Additional Customizations

- Customer Analysis of Major Consumers
- Additional Company Profiles
- Trade Data (Imports and Exports)

Intended Audience

- Calcined bauxitemanufacturers
- Suppliers and traders of calcined bauxite and related products
- Government, associations, and industrial associations
- Investors and trade experts
- Consulting in chemical experts

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