Global High Purity Alumina Market Research Report: Information by Type (4N, 5N and 6N), Application (LED, Semiconductor, Phosphor and others) and Region (North America, Europe, Asia-Pacific, Latin America and Middle East & Africa) - Forecast till 2025

The Global High Purity Alumina Market is expected to register 19.4% CAGR and reach around USD 9,990.2 Million by the end of 2025. High purity alumina (HPA), also known as non-metallurgical aluminum oxide (Al2O3), is a highly pure form of aluminum oxide with purity level ranging from 99.99% to 99.9999%. Alumina is majorly used as a feedstock to produce metallic aluminum. Almost 90% of alumina known as smelter grade alumina, which is used in aluminum metal production, and the remaining 10% is dedicated to the non-metallurgical market for specialty or chemical use. High purity alumina is considered as the high-end form of aluminum oxide, which is used in industrial as well as high tech specialty end uses. The need for HPA is gradually rising owing to factors such as growing demand for LED lightings coupled with decreasing LED prices, increasing demand for lithium-ion batteries due to increased use of electric vehicles, increasing demand in smartphone applications. HPA is a highly pure form of aluminum oxide (Al2O3), which is also known as non-metallurgical alumina. HPA is a key raw material used in a range of applications such as LED, semiconductors, and phosphor. Global high purity alumina market is estimated to witness high demand in the near future. On the basis of application, the LED segment accounted for the largest market share through the forecast period. LED products have a long lifespan and are durable and reliable, which makes their adoption rate high among end-users. This increase in the adoption rate is expected to boost the market in the forecast period. Phosphor used in the manufacturing of plasma displays and protective coatings increases the market share of HPA products.

Market Dynamics

The Global High Purity Alumina Market is projected to register a CAGR of over 19.0% during the forecast period, 2019–2025. The factors that influence the demand for high purity alumina are the demand for LED lightings and decreasing LED prices, growing demand for lithium-ion batteries due to increased use of electric vehicles, rising demand in smartphone applications, and increasing plasma TVs market. There are various factors, trends, and opportunities, which help the high purity alumina market grow. However, there are a few factors that hamper the growth and development of the market. The factors that may hamper the growth of the global high purity alumina market are government regulation on "Red Mud" extracts and limited technical expertise required to provide high purity low-cost production.

Global High Purity Alumina Market, by Application, 2018 (USD Million)
The global high purity alumina market has been segmented by type, application, and region.

Based on product type, the 4N segment is expected to dominate the global high purity alumina market in 2018 with a market share of over 50.0%. 4N high purity alumina is the least pure high purity alumina with maximum impurity level ranging from 0.009% to 0.01%. 4N high purity alumina has low cost compared to 5N and 6N and is expected to be available at lower prices owing to technological innovation in the production process. It accounted for dominating share of over 50.0% in the global high purity alumina by 2018. Prominent applications of 4N include phosphor substrate in the LED lightings and semiconductors. Moreover, the segment is primarily driven by the growing LED market in APAC. The lucrative opportunities created by the segment is attracting investments by major market players, including Altech Chemicals Limited. Altech Chemicals Limited is planning a 4N production facility of capacity of 4,000 TPA to cater to growing demand in Taiwan, Japan, South Korea, and Rest of Asia-Pacific.

High purity alumina is used in a range of hi-tech applications. The global market is segmented based on application as LED, semiconductors, phosphor, and others. LED and semiconductors are estimated to be the key applications. The LED segment is estimated to dominate the market with a value share of around 55% by 2018. This can be attributed to the growing demand in LED lightings in the global market. Sapphire substrate made of high purity alumina is used in LED lights and there is no suitable alternative available in the market. Semiconductors, which is another prominent application for high purity alumina is estimated to account for around 20% market value share in the overall market by 2018. The segment is anticipated to witness steady growth owing to increasing demand from SOS (sapphire on silicon) semiconductors. Furthermore, the other segment, which comprises applications such as lithium-ion batteries and industrial applications is anticipated to witness robust growth. The segment growth is attributed to increasing demand for lithium-ion batteries in electric vehicles.

Sources: MRFR Analysis

Regional Analysis
by region, the global high purity alumina market has been segmented into Europe, North America, Latin America, the Middle East & Africa, and Asia-Pacific.

Asia-Pacific accounted for the largest share of over 65% in 2018 in the global high purity alumina market. The region is segmented into China, Japan, India, and the rest of APAC, where the contribution of China is substantial in Asia-Pacific and the global markets. China has acquired more than 55% of the total market share in terms of value and volume and known for the leading producer and consumer of high purity alumina. Furthermore, Japan is the second-largest market in the Asia-Pacific region by acquiring over 15% of the Asia-Pacific market share. The emerging economies, presence of established players, increasing demand from the automotive and electronics industries, and growing need for LED lightings are the major growth factors that are driving the high purity alumina market in Asia-Pacific.

The North American market held the second-largest market share of over 15% in 2018 owing to the growing adoption of high purity alumina in electronics and semiconductor industries in the region. The US is expected to be the leading market in the region owing to the easy availability of raw materials and their increasing preference in industries due to superior properties.

Key Players

According to MRFR analysis, the key players in the Global High Purity Alumina Market are Alcoa Inc, Sumitomo Chemical Co., Ltd, Nippon Light Metal Holdings Co., Ltd, Sasol Limited, Xuancheng Jingrui New Materials Co., Ltd, Altech Chemicals, Hebei Pengda Advanced Materials Technology, and PSB Industries SA.

Market Segmentation

Global High Purity Alumina Market, by Type

- 4N
- 5N
- 6N

Global High Purity Alumina Market, by Application

- LED
- Semiconductor
- Phosphor
- Others

Global High Purity Alumina Market, by Region

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

- Middle East & Africa
  - Turkey
  - Saudi Arabia
  - UAE
  - Rest of Middle East & Africa

Available Additional Customizations
- Company Profiles of Other Key Players
- Regulatory Framework of General Chemicals
- Raw Material Pricing Analysis
- Pricing Analysis

Intended Audience
- High purity alumina manufacturers
- Suppliers and traders
- Government, associations, and industrial bodies
- Investors and trade experts
- High purity alumina experts and consultants
Infographic Summary:

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