Scandium Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 170 pages | Mordor Intelligence

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Report description:

The scandium market is expected to register a CAGR of over 10% during the forecast period.

The COVID-19 pandemic negatively impacted the scandium market. Due to the lockdown, major end-user segments such as aerospace and defense, ceramics, and electronics were suspended during COVID-19, reducing scandium usage. After 2020, the market expanded steadily because of the continuous activities in major end-user segments.

Key Highlights
The major factors driving the market's growth are the increasing usage of solid oxide fuel cells (SOFCs)? and the growing demand for aluminum-scandium alloys in the aerospace and defense industry?.
The high scandium? cost and inconsistent supply? of scandium are likely to hinder the growth of the studied market.
Growing technology for storing energy and potential applications in the automotive industry will likely create opportunities for the market in the coming years.
The United States is expected to dominate and witness the highest CAGR during the forecast period.

Scandium Market Trends

Solid Oxide Fuel Cells (SOFCs) Segment to Dominate the Market

SOFCs use a solid oxide material as an electrolyte, which helps conduct negative oxygen ions from the cathode to the anode. In these cells, the anode and cathode are made from special inks that cover the electrolyte. Therefore, SOFCs do not require any precious metal, corrosive acids, or molten material.
Electrolyte materials are subjected to high temperatures to catalyze natural gas conversion to energy. However, the high

temperature for the catalyzing conversion process can lead to the quick degradation of ceramic electrolytes, adding to the capital and maintenance cost.
Using scandium in solid electrolytes helps the system operate at much lower temperatures than conventional SOFCs. Thus, the application of scandium helped lower the costs of SOFCs, facilitating its widespread adoption for distributed power generation.
With rising electricity prices, the need to resort to sustainable power generation methods is expected to create substantial market opportunities for the SOFCs market, thus increasing the importance of scandium.
The increasing demand for clean energy over environmental concerns of energy generation from conventional sources, such as coal and natural gas, is expected to drive the demand for solid oxide fuel cells in the future.
Currently, SOFCs are witnessing increased application within transport, industrial equipment, power generation, cooling, disaster relief, and areas where grid connections are unavailable.
A solid oxide fuel cell (SOFC) is an electrochemical conversion device that helps produce electricity directly by combining an oxidant and a fuel across an ionic conducting oxide electrolyte. Furthermore, according to the Energy Information Administration, electricity consumption in the United States was around 3,930 terawatt hours in 2021, witnessing an increase of 2% compared to the previous year. This trend is expected to support the studied market.
Therefore, considering the abovementioned factors, the demand for the scandium market is expected to rise significantly in the solid oxide fuel cells segment shortly.

United States to Dominate the Market

The United States was one of the early adopters of the commercial-scale deployment of fuel cells, supported by government funding with increased uptake by end-users, especially the automobile industry.
The vast opportunities offered by the use of SOFC-based fuel cells as replacements for internal combustion engines in light-duty vehicles and warehouse forklifts to increase vehicle efficiency and support the goals of reducing oil usage and emissions from the transportation sector. It is likely to result in a significant increase in fuel cell deployment in the country.
The United States includes the largest aerospace industry in the world. According to the Bureau of Economic Analysis(BEA), air transport in the United States increased from USD 60.44 billion in 2020 to USD 84 billion in 2021. It is likely to increase scandium usage in the country. Still, due to the COVID-19 outbreak, the aerospace sector in the country was majorly hit, which can have severe repercussions on demand for scandium in aerospace applications.
The military spending by the United States grew by 2% in 2021, reaching around USD 800.67 billion. The considerable army spending contributes to the vast market size for military aircraft, which creates an immense potential demand for scandium.
According to Energy Information Administration, the United States was the second largest electricity consumer in the world in 2021. Furthermore, it is expected to remain the leading market over the forecast period due to advanced technology usage, increased research and development centers, and rising consumer demand.
The United States is the second-largest market for electric vehicles after China. According to the US Department of Energy, Electric vehicle sales rose by 85% in the United States in 2021 compared to the previous year. This growth slowed in 2019 owing to several factors. One of the reasons is the gradual phaseout of the federal fiscal tax credit in January and July 2019.
All factors above are likely to fuel the scandium market growth in the United States over the forecast period.

Scandium Market Competitor Analysis

The scandium market is partially consolidated in nature. Some of the market's major players (not in any particular order) include Scandium International Mining Corp, Australian Mines Ltd, Hunan Oriental Scandium Co., Ltd., Platina Resources Limited, and Materion Corporation, among others.

Additional Benefits:

The market estimate (ME) sheet in Excel format
3 months of analyst support

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