

Aerogel - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2024 - 2029)

<https://marketpublishers.com/r/A13BA1BBD6B6EN.html>

Date: July 2024

Pages: 120

Price: US\$ 4,750.00 (Single User License)

ID: A13BA1BBD6B6EN

Abstracts

The Aerogel Market size is estimated at USD 0.83 billion in 2024, and is expected to reach USD 1.32 billion by 2029, growing at a CAGR of 9.85% during the forecast period (2024-2029).

The COVID-19 pandemic had a notable impact on the global aerogel market. Initially, demand declined due to disruptions in the construction and manufacturing sectors, which are key consumers of aerogel for insulation purposes. However, the market registered a significant growth rate after the restrictions were lifted due to increased focus on energy-efficient building materials post-pandemic, which is driving demand for aerogel insulation.

Over the medium term, a rise in the adoption of aerogel due to its reusability and recyclability, as well as rapidly growing demand from the construction and oil and gas industries, is expected to drive the market demand.

On the flip side, the high cost of production is expected to hinder the market.

Technological advancements and increasing investments offer various opportunities for the growth of the market studied.

North America is expected to dominate the market, while Asia-Pacific is expected to witness the highest CAGR between 2024 and 2029.

Aerogel Market Trends

The Oil and Gas Industry to Dominate the Market

Aerogels are widely used in the oil and gas industry due to their exceptional properties. They are used for insulating pipelines, as an absorbent to selectively absorb specific molecules, such as contaminants or hydrocarbons, and for enhanced oil recovery.

They offer a range of advantages, such as lightweight construction, corrosion resistance, noise reduction, and filtration capabilities, making them a promising material for the oil and gas pipeline industry.

Aerogel products are available in a wide range of forms to meet the different requirements of the oil and gas sector. Aerogel products are easy to install, which results in cost savings for fabricators and installers while delivering operators various benefits of exceptional thermal performance, such as lower capital costs, longer cool-down times, consistent life-of-field U-values, and reduced risk. They offer the highest thermal performance, prevent corrosion, and offer mechanical strength.

Global oil consumption is expected to reach over 104.1 million barrels per day by 2026, as per the International Energy Agency data. This would be a 4.4 mb/d increase over current levels.

As per the US Energy Information Administration report, global crude oil production reached 101.75 million barrels per day in 2023, as compared to 99.99 million barrels per day in 2022, registering a growth.

The United States, Russia, Canada, Saudi Arabia, and China are the leading oil producers in the global market.

According to the United States Energy Information Administration, global crude oil production in 2023 increased by 1.76% and was valued at 101.749 million barrels per day.

By 2045, India is expected to need 11 million barrels of oil per day, which is double what it needs now. Moreover, various companies are investing in expanding exploration facilities across the country. For instance, in May 2022, ONGC announced plans to invest USD 4 billion in FY 2022 and FY 2025 to increase its exploration efforts in India.

Saudi Arabia has approximately 17% of the world's proven petroleum reserves and is one of the largest net petroleum exporters. Saudi Arabia has the world's second-largest proven oil reserves. Saudi Aramco continues its primary expansionary phase and channel investments in its upstream segment, which includes exploration & production of crude oil, condensate, natural gas, and natural gas liquids (NGL).

In Europe, the United Kingdom is exploring new grounds to produce more oil and gas. For instance, the government expects the country to witness 66 new oil and gas generation projects between 2023 and 2027. Moreover, the country announced in July 2023 that it plans to issue several new oil and gas licenses in the North Sea to secure energy reserves.

Thus, due to the abovementioned factors, the oil and gas industry is expected to grow significantly, which, in turn, will enhance the demand for the market studied.

North America to Dominate the Market

The United States is expected to be the leading country in North America for the studied market.

The growing stringent environmental norms by the United States government, growing awareness of eco-friendly products, and extensive research on product and process development to manufacture aerogel are the key factors helping the United States remain in the top position in the market studied. Aerogel is highly used in thermal and acoustic insulation.

The US Department of Energy (DOE) is investing in innovative insulation materials that save energy and money in the industrial sector.

Furthermore, with the rapidly growing building and construction sector and oil and gas industries, the market studied in the United States is expected to increase rapidly over the forecast period.

The oil and gas sector in the United States has witnessed significant developments in recent years. According to the United States Energy

Information Administration, the US crude oil production reached 12.9 million barrels per day (b/d) in 2023, an increase of 8.5% compared to 2022, which was 11.9 million barrels per day. Increased production in the Permian region and increased production of the Gulf of Mexico (GOM) are driving projected production growth. Increasing oil production requires fully operational refineries and an efficient transport network to work consistently, thus supporting the demand for the market studied.

According to the Canadian Construction Association, the construction sector is one of Canada's largest employers and a significant contributor to the country's economic success. The industry generates about USD 141 billion annually and contributes 7.5% of the country's Gross Domestic Product (GDP). In 2023, Canadian construction starts rose by 5.8%. Both new non-residential building and civil engineering increased by 15.4% and 16.2%, respectively.

To achieve sustainable goals, the federal government has committed CAD 150 million (USD 111.40 million) to developing the Canada Sustainable Buildings Strategy. This strategy is projected to reduce costs and mobilize national action to transform markets to meet this goal in FY 2023.

Owing to its strategic location, favorable business environment, and skilled labor force, Mexico has become an important destination for automotive companies looking to establish their production facilities. As the demand for non-emission vehicles is increasing, FDIs from countries such as Germany, China, the United States, and others into automotive manufacturing, especially electric vehicle manufacturing in the country, are increasing, thereby boosting the demand for aerogels in electric vehicles.

The North American region is expected to influence the market during the forecast period due to all these factors.

Aerogel Industry Overview

The aerogel market is partially consolidated in nature. Some of the major players in the market (not in any particular order) include Aspens Aerogels Inc., Cabot Corporation, Armacell, Nano Tech Co. Ltd, and Guangdong Alison Hi-tech Co. Ltd, among others.

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