

Strategic Mineral Materials - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Strategic Mineral Materials Market is expected to register a CAGR of greater than 5% during the forecast period.

Key Highlights

- On the flipside, the impact of COVID-19 pandemic and increasing environmental concerns regarding mining operations is expected to hinder the growth of the market.

- Increasing application base for various strategic minerals is projected to act as an opportunity in the future.

- Asia-Pacific dominated the market with the largest consumption coming from China, followed by India, South Korea, and Japan.

Strategic Mineral Materials Market Trends

Steel Application to Dominate the Niobium Segment

- In general, the properties of steel depend on its chemical composition concerning carbon, manganese, phosphorus, silicon, alloying and micro-alloying elements, and processing conditions. Generally, the easiest way to increase the strength of steel is improving its carbon content. But this adversely affects other necessary properties, such as weldability, toughness, and formability.

- However, niobium has a high affinity for carbon, forming carbides and carbon nitrides, therefore, it is often added to steel and stainless steel in the form of ferro-niobium to maintain a balanced package of properties, the carbon and niobium levels being carefully matched with processing conditions to achieve the desired properties. The result, known as a micro-alloyed steel

product, typically contains around 0.1% niobium by weight, often in conjunction with titanium and vanadium.

- In HSLA steel niobium is often less than 0.1% of the total alloy, but its role as a grain refiner makes a significant difference by increasing strength, weldability, ductility, and toughness of the steel. Strength is generated by grain refinement for the lower grades and a combination of grain refinement and precipitation hardening for the higher grades.

- Strength is generated by grain refinement for the lower grades and a combination of grain refinement and precipitation hardening for the higher grades. These steels are described as interstitial-free, since niobium and titanium fix interstitial elements, like carbon and nitrogen.

- However, the best results are usually achieved with a combination of micro alloys that exploit synergistic benefits. An example of this is the use of niobium and titanium together in 'exposed' interstitial-free steel automobile parts where superior surface quality is essential.

- Most modern HSLA steels fall into this 'low carbon' category. Globally, 90% of the niobium products are used in the steel industry.

- The largest use for niobium in high-strength and low-alloy (HSLA) steel is for automobiles, oil pipelines, and construction. HSLA steels are also used in nuclear reactors (alloyed with zirconium to make core elements), wind turbines, railroad tracks, and in ship building. HSLA steels consume approximately 90% of the annual niobium production.

- Ferro niobium is the most widely used product in the steel industry, which is mainly applied in four fields of the pipeline, automobile, structure, and stainless steel. As for the pipeline industry, the application in China is in line with that in the other parts of the world, but the difference is significant in the application in automotive steel, structural steel, and stainless steel industries.

Asia-Pacific to Dominate the Market

Asia-Pacific dominated the global market. With accelerating usage of various minerals in different applications in countries, such as China, India, South Korea, and Japan, the market studied is likley to witness significant growth during the forecast period. The Asia-Pacific electrical and electronics industry (including semiconductors and telecommunications) grew rapidly in the recent past, owing to the high demand from countries, like India and China. There is a high demand for modern electronic products, due to the rapid pace of innovation, the advancement of technology, and R&D activities in the electronics industry. There is a growth in the number of manufacturing plants and development centers, focusing on high-end products. Aerospace is the another major end-user industry for strategic mineral materials. The demand for aircraft is increasing across the world, and the aerospace industry is aiming to introduce innovative solutions to improve the manufacturing time and save costs. Therefore, the aforementioned factors are accelerating the usage of strategic mineral materials from various applications during the forecast period. However, the demand is likely to be affected during 2020 as well, as economic performance and demand are likely to remain affected by the current COVID-19 pandemic in the region.

Strategic Mineral Materials Industry Overview

The global strategic mineral materials market is fragmented in nature with the presence of numerous players for different minerals. The prominent companies in the market includes Intercontinental Mining, Vale, Anglo American plc, Glencore, CBMM, and Materion Corporation, among others.

Additional Benefits:

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

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