

## **Niobium Pentoxide - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)**

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### **Report description:**

The Niobium Pentoxide Market size is estimated at 5.71 thousand tons in 2025, and is expected to reach 7.59 thousand tons by 2030, at a CAGR of 5.83% during the forecast period (2025-2030).

The niobium pentoxide market faced setbacks due to COVID-19. Global lockdowns and stringent government regulations led to widespread shutdowns of production hubs. However, the market rebounded in 2021 and is projected to see significant growth in the upcoming years.

### **Key Highlights**

- Over the short term, the growing demand for niobium pentoxide in the optics industry and the increasing demand for high-quality steel from the manufacturing sector are the major factors driving the demand for the market studied.
- However, concerns about health issues caused by acute exposure to niobium pentoxide are expected to hinder the market's growth.
- Nevertheless, the growing demand from the biomedical sector is expected to create new opportunities for the market studied.
- Asia-Pacific region is expected to dominate the market across the world, with the majority of demand coming from China and India.

### **Niobium Pentoxide Market Trends**

Increasing Demand for High-quality Steel from the Manufacturing Sector

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- The manufacturing sector's surging demand for high-quality steel is driving the rising trend of niobium pentoxide. Its incorporation in steel production enhances strength, toughness, and corrosion resistance, solidifying its role as a vital alloying element across diverse steel applications.
- Niobium pentoxide bolsters the strength and toughness of high-strength, low-alloy (HSLA) steel, which is widely utilized in the construction, transportation, and energy sectors.
- In stainless steel, niobium pentoxide enhances corrosion resistance, benefiting sectors like food processing, chemical processing, and medical equipment.
- Additionally, it strengthens pipeline steel, which is crucial for oil and gas transportation.
- According to the World Steel Association (worldsteel), global crude steel production dipped to 135.7 million tonnes (Mt) in December 2023 from 144.9 million tonnes (Mt) in November 2023. However, July 2024 saw a rebound to 152.8 million tonnes (Mt). Despite this, it represented a 4.7% decline from July 2023, highlighting the industry's challenges. However, as emerging economies intensify their infrastructure and construction initiatives, steel demand is set to recover in the coming years.
- Additionally, bolstered steel production capacities in nations like China, Japan, and the United States have further fueled global steel output, thereby supporting the growth of the market studied.
- As per the World Steel Association, Japan's steel production in July 2024 stood at 7.1 Mt, marking a 3.8% decline from the same month in 2023. Year-to-date figures show a production of 49.8 Mt, reflecting a 2.8% year-on-year drop.
- The United States, ranked as the fourth-largest producer of crude steel globally, reported a production of 6.9 Mt in July 2024, witnessing a modest increase of 2.1%. However, the year-to-date production figures were at 46.9 Mt, indicating a decline of 1.8%, as per the World Steel Association.
- Germany showcased a positive trend, producing an estimated 3.1 Mt in July 2024, which is a 4.8% increase. Year-to-date, Germany's production reached 22.5 Mt, marking a notable 4.5% rise, according to data from the World Steel Association.
- Brazil led the pack with the highest growth, producing 3.1 Mt in July 2024, an impressive increase of 11.6%. Year-to-date, Brazil's production stood at 19.4 Mt, up by 3.3%, as reported by the World Steel Association.
- In 2023, South Africa's crude steel production reached approximately 4,871.0 kilotons, marking a growth rate of about 10.64% from the previous year. This surge in production, as reported by the World Steel Association (worldsteel), underscored the country's steel sector and niobium pentoxide market.
- Steel is integral to various sectors, from construction and railroads to automotive manufacturing and consumer goods. Over the last decade, industrialization in developing nations, especially India, has significantly boosted steel demand.
- Given these dynamics, the niobium pentoxide market is poised for substantial growth in the coming years.

#### Asia Pacific Region is Expected to Dominate the Market

- Asia-Pacific is set to dominate the niobium pentoxide market, emerging as the fastest-growing region during the forecast period. This growth is driven by rising demands across various applications, such as niobium metal, optical glass, supercapacitors, superalloys, and ceramics, especially in countries like China, India, South Korea, Japan, and several Southeast Asian nations.
- Niobium pentoxide and its derivatives play a crucial role in iron and steel production. Adding niobium enhances steel's strength and boosts its resistance to high-temperature oxidation and corrosion. Niobium also lowers the ductile-brittle transition temperature and enhances welding properties and formability. It's particularly vital in producing high-grade structural steel, high-strength low alloy (HSLA) steels, and stainless steel.
- HSLA steels, enriched with niobium, find primary applications in the automotive and construction sectors. Notably, around 80% of all automotive sheet steel grades are micro-alloyed with niobium, ensuring vehicles are fuel-efficient, safe, and durable.
- In India, data from the Society of Indian Automobile Manufacturers (SIAM) indicates that from January to March 2024, the production of passenger vehicles, commercial vehicles, three wheelers, two wheelers and quadricycle reached 7.39 million units. Specifically, sales for passenger and commercial vehicles were 1.14 million and 268 thousand units, respectively.

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- In 2024, India is set to witness a 70% surge in the availability of affordable housing. According to Invest India, the construction sector is projected to attain a valuation of USD 1.4 trillion by 2025. With forecasts suggesting that over 30% of the population will be urban dwellers by 2030, there's a pressing need for 25 million more mid-end and affordable housing units. Recent reforms, such as the Real Estate Act, GST, and REITs, aim to expedite approvals and strengthen the construction industry, driving market growth.
- China stands as the globe's leading producer of iron and steel, with its output serving both domestic and international markets. As per the data from the World Steel Association, while China retained its title as the largest producer, it saw a 9.0% dip in output for July 2024, totaling 82.9 million tonnes (Mt). Year-to-date figures show China's production at 613.7 Mt, reflecting a 2.2% drop from 2023.
- According to BigMint, India's steel production is projected to grow by nearly 6% year-on-year, reaching 152 million tons by the close of FY2024/2025 (ending March 2025). The bulk of this projected output is anticipated to stem from steel mills utilizing blast furnaces.
- Niobium alloys are also pivotal in construction, especially for structural and load-bearing components. China, leading the global construction arena with 20% of worldwide investments, is set to spend nearly USD 13 trillion on buildings by 2030, signaling a robust market outlook.
- Data from the Plastics Export Promotion Council highlights that India achieved its highest monthly export of spectacles and goggles in December 2023, a milestone not seen in 60 months. The Indian optical market currently grapples with challenges like low-cost competition, reliance on imported lenses, and swiftly evolving consumer preferences. In 2023, the market for contact lenses in India was valued at approximately USD 164.30 million.
- According to the Boeing's Commercial Outlook (2023-2042) anticipates around 8,560 new aircraft deliveries in China by 2042. This surge in deliveries is expected to elevate the demand for niobium pentoxide in manufacturing aircraft components, particularly engine blades.
- Niobium pentoxide is emerging as a key player in developing high-performance supercapacitors, owing to its high surface area, excellent electrical conductivity, stability, and durability..
- Data from China's National Energy Administration indicates that in 2023, the country installed over 31 gigawatts of new energy storage systems, with projections reaching 36 gigawatts by 2024. Endorsed by Chinese leadership, these new energy storage solutions encompass lithium-ion batteries, supercapacitors, and flow batteries.
- Given these dynamics, the niobium pentoxide market in the Asia-Pacific region is poised for steady growth during the forecast period.

## Niobium Pentoxide Industry Overview

The niobium pentoxide market is consolidated in nature. The major players (not in any particular order) include CBMM, Ximei Resources Holding Limited, JSC Solikamsk Magnesium Plant, AMG, and JX Advanced Metals Corporation, among others.

### Additional Benefits:

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

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