

Ferrovandium Market Forecasts to 2030 – Global Analysis By Grade (FeV40, FeV50, FeV60, FeV75 and Other Grades), Manufacturing Process, Application, End User and By Geography

<https://marketpublishers.com/r/F0901D439D94EN.html>

Date: February 2025

Pages: 150

Price: US\$ 4,150.00 (Single User License)

ID: F0901D439D94EN

Abstracts

According to Statistics MRC, the Global Ferrovandium Market is accounted for \$4.1 billion in 2024 and is expected to reach \$6.1 billion by 2030 growing at a CAGR of 6.7% during the forecast period. Ferrovandium is an alloy composed primarily of iron and vanadium, typically containing 35% to 85% vanadium. This alloy is produced by combining iron and vanadium oxides in an electric arc furnace, often with small amounts of other elements like carbon, aluminum, sulfur, and manganese. Ferrovandium is known for its grayish crystalline appearance and is often crushed into a powder called ferrovandium dust. It is widely used in the steel industry to enhance the hardness, strength, and corrosion resistance of steel products. Additionally, ferrovandium is utilized in the production of high-strength low-alloy steel, tool steels, and various ferrous-based products. Its unique properties make it a valuable additive in applications requiring durable and resilient materials.

Market Dynamics:

Driver:

Rising demand for high-strength steel

The growing need for high-strength, low-alloy steel in industries such as construction, automotive, and aerospace is a major driver for the ferrovandium market. These industries require materials that offer enhanced strength, durability, and corrosion resistance. Ferrovandium is an essential alloying element in the production of these

high-performance steels. As, urbanization infrastructure projects expand globally, the demand for robust steel products increases. This rising demand fuels the growth of the ferrovanadium market.

Restraint:

Limited vanadium reserves

The availability of vanadium, a critical component of ferrovanadium, is constrained by limited global reserves. Most vanadium is sourced from a few key regions, leading to supply vulnerabilities. Fluctuations in vanadium prices due to geopolitical and economic factors can impact the cost and availability of ferrovanadium. Additionally, the extraction and processing of vanadium are subject to environmental regulations, which can further limit supply. These constraints pose a significant challenge to the growth of the ferrovanadium market.

Opportunity:

Innovations in mining and alloy production techniques

Advancements in mining technologies and alloy production methods offer significant opportunities for the ferrovanadium market. New techniques in vanadium extraction and processing can improve efficiency and reduce environmental impact. Innovations in alloying processes can enhance the properties of ferrovanadium, making it more desirable for high-performance steel applications. These technological advancements can also lower production costs, making ferrovanadium more accessible to a broader range of industries. The ongoing research and development efforts in this field present substantial growth potential.

Threat:

Alternatives in steel alloys

The development and adoption of alternative materials and alloys pose a threat to the ferrovanadium market. Some industries are exploring other alloying elements that can provide similar or superior properties at a lower cost. For instance, alloys using titanium or aluminum may offer competitive advantages in certain applications. As these alternatives become more widely accepted, they could reduce the demand for ferrovanadium. The market must continuously innovate to maintain its relevance and

competitive edge.

Covid-19 Impact

The Covid-19 pandemic had a mixed impact on the ferrovanadium market. While disruptions in supply chains and reduced industrial activity initially affected production and demand, the recovery phase saw increased demand for high-strength steel in construction and infrastructure projects. The pandemic underscored the need for resilient supply chains and highlighted the importance of ferrovanadium in critical applications. As economies rebound, the demand for ferrovanadium is expected to recover and grow. The lessons learned from the pandemic are likely to drive further innovation and adaptation in the market.

The FeV50 segment is expected to be the largest during the forecast period

The FeV50 segment is expected to account for the largest market share during the forecast period. Its high vanadium content makes it particularly valuable for producing high-strength, low-alloy steels. The widespread use of FeV50 in construction, automotive, and aerospace industries drives its demand. Additionally, FeV50's superior properties, such as improved tensile strength and resistance to wear and corrosion, make it a preferred choice for various applications. As a result, the FeV50 segment is expected to maintain its leading position in the market.

The steelmaking segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the steelmaking segment is predicted to witness the highest growth rate due to the increasing adoption of ferrovanadium in steel production. High-strength steels, which require ferrovanadium as an alloying element, are in growing demand across various industries. The need for materials that offer enhanced performance, durability, and sustainability drives the growth of the steelmaking segment. Innovations in steel manufacturing processes and the development of new steel grades further boost this segment. The steelmaking industry's focus on efficiency and quality will continue to drive the demand for ferrovanadium.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share. The region's advanced industrial infrastructure and strong presence of

key players in the steel and aerospace industries contribute to its dominance. North America's focus on technological innovation and high-quality manufacturing standards drives the demand for high-performance materials like ferrovanadium. The region also benefits from favorable government policies and investments in infrastructure projects. As a result, North America is poised to maintain its leading position in the ferrovanadium market.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR owing to rapid industrialization, urbanization, and infrastructure development in countries like China, India, and Southeast Asian nations. The region's expanding automotive and construction industries further contribute to the growth of the ferrovanadium market. Additionally, increasing investments in manufacturing and technological advancements support the region's robust growth. The Asia Pacific market is expected to experience significant expansion, driven by economic development and industrial growth.

Key players in the market

Some of the key players in Ferrovanadium market include Advanced Metallurgical Group, Atlantic Ltd., Bear Metallurgical Company, Bushveld Minerals Limited, Core Metals Group, Elkem, Evraz PLC, Gulf Chemical & Metallurgical Corporation, HBIS Chengsteel, Hickman, JFE Material, OM Holdings, Pangang, Shiva Metals Energy, Tremond Metals Corp and Williams.

Key Developments:

In January 2024, Elkem Silicones announced new partnership with Silstar in South Africa and neighboring countries. This strategic change aims to strengthen our distribution network and enhance the customer experience.

In July 2024, AMG Critical Materials acquired a strategic Stake in Savannah resources. The terms of the agreement include a seat on Savannah's Board of Directors, a 5-year offtake of the Project at 45ktpa of spodumene (or 225,000 DMT in the aggregate), with the opportunity to increase the offtake to 90ktpa.

In July 2024, AMG Critical Materials N.V.'s subsidiary Graphit Kropfmuhl and BASF have entered into an innovative agreement to reduce their product carbon footprint.

Under this agreement, BASF will supply renewable energy certificates to Graphit Kropfmuhl's production site.

Grades Covered:

FeV40

FeV50

FeV60

FeV75

Other Grades

Manufacturing Processes Covered:

Aluminothermic Reduction Technique

Silicon Reduction Technique

Applications Covered:

Steelmaking

Corrosion-Resistant Alloys

Tool Steels

High-Strength Steel

Other Applications

End Users Covered:

Automotive

Construction

Energy

Aerospace

Medical

Other End Users

Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants

- Covers Market data for the years 2022, 2023, 2024, 2026, and 2030
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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