



Global Ferroboron Market

Market size, segmentation, competitive landscape and outlook

2021-2031

September 2026

Moving forward, together



Every one of us has, at some point, heard the line from *Alice in Wonderland*: “It takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast.” Cliché as the quote has become, our world is changing at extraordinary speed. And yet, to my mind, it matters not only to run fast, but — more importantly — to know where you are running.

We see ourselves as the navigator, ready at the right moment to point out the correct course. By providing current, timely information for the decisions that matter, we aim to protect our clients from missteps and to help them find new opportunities.

It matters to us that you are satisfied with the work we have done. If you have any questions about this report, we will be glad to answer them.

ANDREY SHEVCHENKO, Managing Partner

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Market at a glance

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Indicator	Value
Market size (2025)	USD 0.4 bn
Forecast (2031)	USD 0.6 bn
CAGR (2021-2031)	5.2%
Study period	2021-2031
Largest region	Asia-Pacific · 61.8%
Fastest-growing region	North America · 6.7%
Market concentration	Moderate
Licence	Individual / Company

The global ferroboron market reached USD XXX billion in 2025 and will expand to USD XXX billion by 2031, advancing at a XX% CAGR. Specialty and alloy steel remains the largest application, while magnet-grade ferroboron records the strongest growth as NdFeB production expands across electric mobility, wind power, robotics and defense. Asia-Pacific accounts for XX% of market value, reflecting China's integrated boron, ferroalloy, steel and permanent-magnet supply chain. Supply-security programs in the United States, European Union and Japan are creating a second investment cycle centered on low-carbon, low-aluminum and traceable ferroboron.

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Executive summary

The global ferroboron market reached USD XXX billion in 2025 and will expand to USD XXX billion by 2031, advancing at a XX% CAGR. Specialty and alloy steel remains the largest application, while magnet-grade ferroboron records the strongest growth as NdFeB production expands across electric mobility, wind power, robotics and defense. Asia-Pacific accounts for XX% of market value, reflecting China's integrated boron, ferroalloy, steel and permanent-magnet supply chain. Supply-security programs in the United States, European Union and Japan are creating a second investment cycle centered on low-carbon, low-aluminum and traceable ferroboron.

Indicator	Value
Market size 2025	XXX
Forecast 2031	XXX
CAGR	XXX
Largest region	XXX
Fastest region	XXX

Key findings

- The global ferroboron market generated USD XXX billion in 2025 and is forecast to reach USD XXX billion in 2031.
- Global crude steel output totaled XXX tonnes in 2025, maintaining the industrial base for boron-treated engineering and wear-resistant steels.
- Specialty and alloy steel represented XX% of 2025 ferroboron market value, equivalent to USD XXX million.
- NdFeB permanent magnets accounted for XX% of 2025 demand and will grow at a XX% CAGR through 2031.
- Global electric-car sales exceeded XXX units in 2025 and represented one-quarter of new-car sales, strengthening demand for high-efficiency permanent-magnet motors.
- The wind industry installed 117 GW of new capacity in 2024, supporting ferroboron consumption in NdFeB generator magnets.
- Low-carbon ferroboron captured XX% of market value because carbon, aluminum and silicon controls are decisive in premium steel and magnet applications.
- Asia-Pacific held XX% of global market value in 2025, led by China, Japan, South Korea and India.

Market size and forecast

Market value by year, USD bn

Indicator	2026	2027	2028	2029	2030	2031	CAGR
Market value, USD bn	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Market volume	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Production	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Imports	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Exports	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Apparent consumption	XXX	XXX	XXX	XXX	XXX	XXX	XXX

Source: XXX

Year-over-year value change

Indicator	2027	2028	2029	2030	2031	CAGR
Market value	X%	X%	X%	X%	X%	X%
Production	X%	X%	X%	X%	X%	X%
Imports	X%	X%	X%	X%	X%	X%
Exports	X%	X%	X%	X%	X%	X%

Source: XXX

Global Ferroboron Market Trends and Growth Drivers

Ferroboron occupies a strategically important position between the borate, ferroalloy, advanced-steel and permanent-magnet industries. Its physical market is small relative to bulk ferroalloys, but customer production lines depend on precise boron delivery, making supply continuity and chemical consistency disproportionately valuable.

Demand is separating into two distinct economic tiers. Standard lump grades follow steel production, alloying economics and regional distributor inventories, while low-carbon powders and high-purity magnet grades follow electrification, grid efficiency and defense localization. The premium tier grows faster and supports longer qualification-led customer relationships.

Supply strategy is becoming as important as demand growth. China retains the deepest production ecosystem, Japan preserves specialist capability, and planned U.S. projects are targeting import substitution. Over the forecast period, traceability, lower embedded carbon and upstream borate access will increasingly influence contract awards alongside price.

Growth drivers

NdFeB magnet capacity expansion

Electric traction motors, wind generators, industrial servomotors and defense actuators are expanding demand for tightly controlled magnet-grade ferroboron. These customers place a premium on low carbon, low aluminum and repeatable particle sizing because impurities directly affect alloy melting and magnetic performance.

Boron-treated advanced steels

Small boron additions materially improve steel hardenability, allowing producers to achieve target strength with efficient alloy design. Automotive fasteners, agricultural components, mining wear plate and construction machinery provide a broad volume base that is less cyclical than any single magnet application.

Permanent-magnet supply localization

Public financing and procurement programs are moving rare-earth separation, alloying and magnet production closer to end users in North America and Europe. Ferroboron benefits as an essential, low-volume input that must be qualified alongside neodymium-praseodymium metal and other alloy additions.

High-efficiency electrical infrastructure

Amorphous metal transformer cores reduce no-load electrical losses and use iron-silicon-boron alloy systems. Grid modernization, data-center electricity demand and efficiency standards support a specialized ferroboron outlet with demanding purity and powder-handling requirements.

Microalloying cost efficiency

Boron can deliver hardenability gains at very low addition rates, improving the economics of selected steel recipes relative to heavier additions of other alloying elements. Steelmakers with advanced ladle control are widening the addressable range of boron-treated grades.

Wear-resistant welding demand

Ferroboration powder is used in flux-cored wires, electrode coatings and hardfacing systems for mining, cement and material-handling equipment. Infrastructure renewal and the need to extend component life favor engineered powder grades with controlled moisture, flow and particle distribution.

Restraints

Feedstock and power-cost volatility

Ferroboration production requires energy-intensive reduction and exposure to boric acid, aluminum, iron and electricity prices. Sudden input-cost increases compress margins on fixed-price steel contracts and raise working-capital requirements for smaller producers.

Concentrated supply-chain exposure

China controls a large share of commercially available ferroboration and adjacent permanent-magnet processing capacity. Trade controls, logistics disruptions and customs delays can therefore interrupt low-volume but production-critical shipments.

Long qualification cycles

Magnet-alloy and premium-steel consumers validate chemistry, inclusions, gas content, particle size and lot consistency before approving a supplier. Qualification commonly delays revenue from new capacity and limits rapid substitution during shortages.

Alternative boron additions

Some steelmaking routes can use boron-containing wire, boron carbide or other master-alloy systems depending on process economics and recovery. These alternatives constrain ferroboration's share where precise boron recovery or handling advantages do not offset the price differential.

Ferroboron Market Driver and Restraint Impact on the Forecast

Drivers — impact on forecast

Driver	Impact on CAGR	Geography	Horizon
NdFeB magnet capacity expansion	XXX	XXX	XXX
Boron-treated advanced steels	XXX	XXX	XXX
Permanent-magnet supply localization	XXX	XXX	XXX
High-efficiency electrical infrastructure	XXX	XXX	XXX
Microalloying cost efficiency	XXX	XXX	XXX
Wear-resistant welding demand	XXX	XXX	XXX

Source: XXX

Restraints — impact on forecast

Restraint	Impact on CAGR	Geography	Horizon
Feedstock and power-cost volatility	XXX	XXX	XXX
Concentrated supply-chain exposure	XXX	XXX	XXX
Long qualification cycles	XXX	XXX	XXX
Alternative boron additions	XXX	XXX	XXX

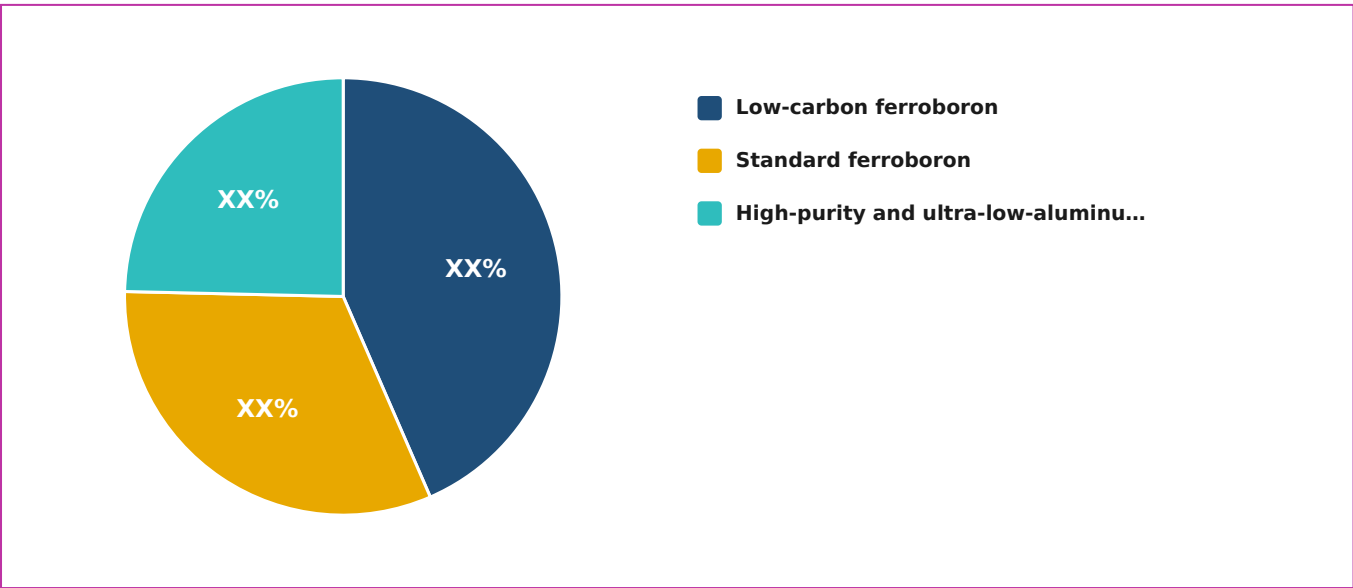
Source: XXX

Ferroboron Market Segmentation by Grade, Form and Application

By Grade

Low-carbon material dominates magnet alloys, amorphous metals and tightly specified steels because carbon pickup can impair downstream properties. Standard ferroboron remains important in general steel and foundry applications where broader impurity windows are acceptable. High-purity and ultra-low-aluminum grades grow fastest as magnet producers tighten control of oxygen, aluminum, silicon and trace contaminants.

Value share by grade, 2025



Source: XXX

Value by grade, USD bn

Segment	2026	2027	2028	2029	2030	2031	Share 2025	CAGR
Low-carbon ferroboron	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Standard ferroboron	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
High-purity and ultra-low-aluminum ferroboron	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX

Source: XXX

By Form

Lumps remain the preferred form for bulk furnace and ladle additions because they offer straightforward handling and favorable processing cost. Powder commands higher unit value in welding, amorphous alloy and controlled magnet-alloy melting applications. Granules and cored-wire-compatible material gain share

where automated dosing and boron recovery justify additional processing.

Value by form, USD bn

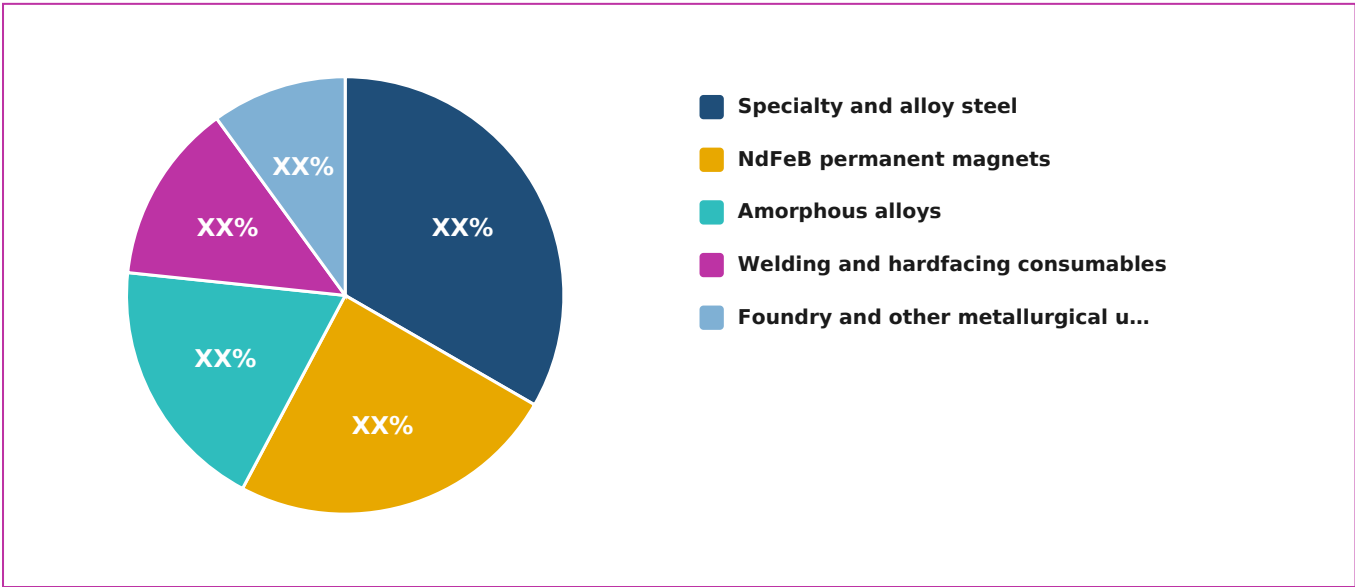
Segment	2026	2027	2028	2029	2030	2031	Share 2025	CAGR
Lumps	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Powder	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Granules and cored-wire feed	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX

Source: XXX

By Application

Steel applications provide the largest installed demand base, spanning hardenable automotive components, fasteners, wear plate and heavy equipment. NdFeB magnets are the fastest-growing major outlet because electrified drivetrains, industrial automation and wind generators require high-performance permanent magnets. Amorphous alloys form a smaller but premium segment linked to transformer efficiency, while welding and hardfacing demand is supported by maintenance-intensive industries.

Value share by application, 2025



Source: XXX

Value by application, USD bn

Segment	2026	2027	2028	2029	2030	2031	Share 2025	CAGR
Specialty and alloy steel	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
NdFeB permanent magnets	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Amorphous alloys	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Welding and hardfacing consumables	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Foundry and other metallurgical uses	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX

Source: XXX

By Sales Channel

Direct contracts dominate magnet-alloy producers, amorphous-metal manufacturers and integrated steelmakers because these buyers require stable chemistry, technical documentation and scheduled deliveries. Distributors serve smaller foundries, welding-consumable manufacturers, research users and customers requiring regional inventory or custom powder processing. The direct channel gains further influence as long-term supply agreements replace opportunistic spot purchasing.

Value by sales Channel, USD bn

Segment	2026	2027	2028	2029	2030	2031	Share 2025	CAGR
Direct producer sales	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Distributors and specialty material suppliers	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX

Source: XXX

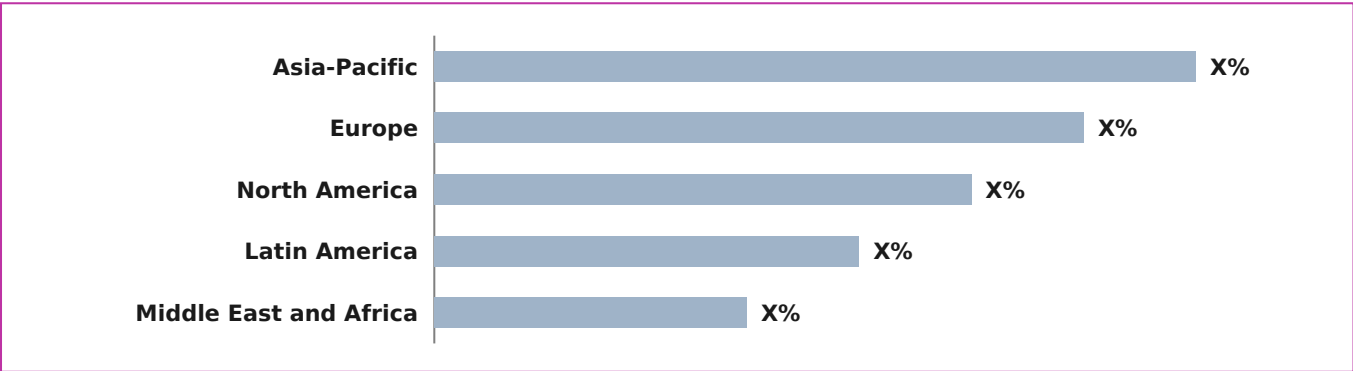
Ferroboron Market Regional Analysis and Country Outlook

Asia-Pacific generated XX% of global ferroboron revenue in 2025. China combines borate conversion, ferroalloy reduction, specialty-steel output and the world's deepest NdFeB manufacturing ecosystem, while Japan remains a premium market for high-consistency material used in magnets, amorphous alloys and advanced steel. India is gaining share through specialty-steel expansion and powder-based welding consumables, and South Korea contributes demand from automotive, electrical and precision-material applications.

Europe accounted for XX% of market value, with Germany, Italy, France and the Nordic region supporting demand from automotive steel, industrial equipment, transformer materials and wind-power supply chains. The Critical Raw Materials Act and permanent-magnet traceability initiatives strengthen the business case for diversified sources, although regional ferroboron production remains limited and imported material continues to dominate.

North America represented XX% of 2025 value but will grow fastest at XX% through 2031. The United States is moving from near-total import reliance toward an integrated mine-to-magnet strategy: MP Materials has begun commercial-equipment production of NdFeB magnets in Texas, while 5E Advanced Materials is developing a ferroboron pathway linked to Fort Cady boric acid. Latin America and the Middle East and Africa remain smaller markets, led by Brazilian specialty steel, Mexican automotive manufacturing, Turkish steelmaking and Gulf infrastructure investment.

Growth rate by region, 2025-2031



Source: XXX

Market value by region, USD bn

Region	2026	2027	2028	2029	2030	2031	Share 2025	CAGR
Asia-Pacific	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Europe	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
North America	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Latin America	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Middle East and Africa	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX

Source: XXX

Market value by leading country, USD bn

Country	2025	2031	Share 2025	CAGR
United States	XXX	XXX	XXX	XXX
Germany	XXX	XXX	XXX	XXX
United Kingdom	XXX	XXX	XXX	XXX
Belgium	XXX	XXX	XXX	XXX
Netherlands	XXX	XXX	XXX	XXX
Japan	XXX	XXX	XXX	XXX
China	XXX	XXX	XXX	XXX
Mexico	XXX	XXX	XXX	XXX

Source: XXX

Ferroboron Market Competitive Landscape and Company Share

The ferroboron market is moderately concentrated at the qualified-producer level and fragmented at the trading and specialty-powder level. Chinese producers lead standard and low-carbon tonnage, while Nippon Denko occupies a distinctive position in Japanese high-specification applications. Qualification records, impurity control, boron recovery and delivery reliability matter more than nominal furnace capacity in determining addressable premium demand.

Competition is shifting from spot availability toward integrated supply assurance. Producers are securing borate feedstock, improving low-aluminum reduction routes and offering application-specific sizing for magnets, amorphous alloys and welding consumables. Distributors and micronizers remain important for smaller lots, documentation, regional warehousing and custom powder cuts, but direct contracts dominate large magnet and steel accounts.

The most consequential strategic move is the emergence of prospective U.S. production. 5E Advanced Materials is targeting ferroboron derived from Fort Cady boric acid, while the build-out of domestic NdFeB capacity creates a nearby qualification market. Through 2031, competitive advantage will accrue to suppliers capable of verified low-carbon chemistry, multi-year offtake, auditable origin and technical support during customer melting trials.

Leading companies

Company	HQ	Est. revenue 2025	Market share 2025	YoY
Nippon Denko Co., Ltd.	XXX	XXX	XXX	XXX
Dandong Lifeng Silicon Magnesium Co., Ltd.	XXX	XXX	XXX	XXX
Kamman Group	XXX	XXX	XXX	XXX
Shanghai Knowhow Powder-Tech Co., Ltd.	XXX	XXX	XXX	XXX
Luode Metal	XXX	XXX	XXX	XXX
Jiangsu Yuangeng Metal Technology Co., Ltd.	XXX	XXX	XXX	XXX
American Elements	XXX	XXX	XXX	XXX
Atlantic Equipment Engineers	XXX	XXX	XXX	XXX
Stanford Advanced Materials	XXX	XXX	XXX	XXX
5E Advanced Materials, Inc.	XXX	XXX	XXX	XXX

Source: XXX

Ferroboron Market Forecast, Investment Priorities and Opportunities

The market will add USD XXX million of annual value between 2025 and 2031. Specialty steel remains the volume anchor, but NdFeB magnets contribute the largest share of incremental revenue as electric mobility, robotics, defense electronics and high-efficiency motors raise demand for controlled magnet-grade material. Average selling prices remain supported by tighter impurity specifications even as standard-grade competition limits broad commodity inflation.

The base-case forecast assumes steady specialty-steel growth, continued magnet-capacity investment and gradual diversification outside China. An accelerated localization scenario would lift the 2031 market above USD XXX billion through higher-cost Western output and strategic inventories, while a slower electrification scenario would hold the market near USD XXX billion. Steel demand alone prevents a severe contraction because boron microalloying serves a wide range of mechanical-performance applications.

Winning suppliers will integrate feedstock security with application engineering. Low-carbon ferroboron below demanding carbon and aluminum thresholds, powders with narrow particle-size distributions and documented renewable-power intensity will capture the strongest premiums. New entrants must secure anchor customers early because qualification lead times, rather than furnace construction, determine the pace of commercial ramp-up.

Opportunities

- Domestic magnet-grade ferroboron production in the United States and Europe
- Low-aluminum and ultra-low-carbon grades for high-coercivity NdFeB alloys
- Fine and atomized powders for additive manufacturing, welding and powder metallurgy
- Long-term offtake agreements linking borate resources with magnet and specialty-steel consumers
- Closed-loop recovery of boron-bearing fines, slags and magnet-production scrap
- Certified low-carbon ferroboron produced with renewable electricity and improved reductant efficiency

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