

Advanced Magnetic Materials & Rare-Earth Alternatives Market Forecasts to 2034 - Global Analysis By Material Type (Advanced Permanent Magnets, Soft Magnetic Materials, Rare-Earth Alternatives and Hybrid & Nanostructured Magnetic Materials), Technology, Functional Use, End User and By Geography

<https://marketpublishers.com/r/AF4D3CAF2F19EN.html>

Date: June 2026

Pages: 200

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

ID: AF4D3CAF2F19EN

Abstracts

According to Statistics MRC, the Global Advanced Magnetic Materials & Rare-Earth Alternatives Market is accounted for \$38.7 billion in 2026 and is expected to reach \$63.6 billion by 2034 growing at a CAGR of 6.4% during the forecast period. Advanced Magnetic Materials & Rare-Earth Alternatives encompass innovative magnetic materials developed to deliver strong performance while minimizing reliance on traditional rare-earth elements. Key approaches include ferrite, alnico, iron-based, manganese-based, and nanostructured magnetic materials. Their development targets enhanced magnetic strength, thermal durability, corrosion resistance, and energy efficiency. Ongoing research highlights substitution, recycling, material engineering, and abundant-element formulations. These innovations enable improved motors, generators, sensors, actuators, electronic components, and other applications requiring dependable magnetic functionality under challenging operating environments.

According to the International Energy Agency (IEA), China accounted for 60% of global mined production of magnet rare earths and 91% of global refined output in 2024, while its share of permanent magnet production reached 94%. This supports the need for alternative magnetic materials and diversified supply chains.

Market Dynamics:

Driver:**Demand for high-performance magnets**

Rising requirements for high-performance magnetic components are supporting growth in the Advanced Magnetic Materials & Rare-Earth Alternatives Market. Applications such as electric vehicles, wind energy equipment, industrial motors, robotics, aerospace systems, and sophisticated electronics need magnets with strong magnetic characteristics, durability, heat resistance, and efficient operation. This demand encourages manufacturers to develop advanced materials capable of delivering reliable performance while limiting dependence on traditional rare-earth elements. Progress in material design and magnetic performance is broadening adoption across energy, transportation, industrial, and electronics sectors.

Restraint:**High development and production costs**

Elevated research and manufacturing expenses may limit expansion of the Advanced Magnetic Materials & Rare-Earth Alternatives Market. Achieving magnetic performance, heat resistance, durability, and efficiency comparable with established rare-earth magnets often demands significant research, specialized production techniques, sophisticated equipment, and rigorous testing. New material technologies can also require changes to existing manufacturing systems, raising investment and operating costs. Such financial challenges may discourage smaller producers and delay commercialization, especially in applications where conventional magnetic materials continue to offer competitive production economics.

Opportunity:**Expansion of electric mobility and renewable energy**

Increasing adoption of electric vehicles and renewable power technologies is creating new opportunities for advanced magnetic materials and rare-earth alternatives. Traction motors in electric vehicles and generators used in wind and other renewable systems depend on magnetic components for efficient operation. The need for durable, economical, and resource-efficient technologies is encouraging research into materials based on more abundant elements. Developments in ferrites, iron alloys, manganese compounds, and nanostructured materials can expand applications across electric transportation, renewable energy infrastructure, and power-generation equipment.

Threat:

Competition from established rare-earth magnet technologies

Established rare-earth magnet technologies can create competitive pressure for advanced magnetic materials and alternative solutions. Neodymium-iron-boron and samarium-cobalt magnets provide strong magnetic performance, compact configurations, and established reliability in electric vehicles, electronics, industrial equipment, and aerospace systems. Mature production capabilities and widespread industry experience may discourage users from adopting newer materials. If alternative technologies cannot consistently provide comparable performance, production scalability, and economic advantages, manufacturers may retain conventional rare-earth magnets, potentially restricting the adoption and commercialization of emerging magnetic material solutions.

Covid-19 Impact:

The COVID-19 pandemic affected the Advanced Magnetic Materials & Rare-Earth Alternatives Market through disruptions to production, logistics, labor availability, and industrial activity. Temporary facility shutdowns and transportation limitations created difficulties in obtaining materials and manufacturing components, while economic uncertainty delayed some investments in automotive, electronics, and industrial sectors. At the same time, applications involving medical equipment, automation, and electronics maintained demand in specific areas. Supply chain vulnerabilities exposed during the pandemic encouraged greater interest in regional sourcing, material alternatives, recycling, and resilient manufacturing approaches.

The advanced permanent magnets segment is expected to be the largest during the forecast period

The advanced permanent magnets segment is expected to account for the largest market share during the forecast period because of their widespread importance in applications requiring reliable and continuous magnetic performance. They generate magnetic fields without ongoing electrical input, supporting their use in electric motors, generators, sensors, actuators, robotics, automotive technologies, electronics, and industrial machinery. Research and engineering efforts increasingly target greater magnetic strength, heat resistance, durability, and operating efficiency, alongside reduced dependence on limited resources. Their versatility across numerous technology areas and industrial systems continues to drive significant utilization and adoption

globally.

The automotive & transportation segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the automotive & transportation segment is predicted to witness the highest growth rate, driven by growing adoption of advanced magnetic materials in electric and hybrid mobility. Magnetic technologies play important roles in traction motors, powertrain systems, sensors, actuators, braking technologies, and various automotive components. Increasing electrification is encouraging automakers and suppliers to pursue materials offering stronger magnetic performance, improved heat resistance, lighter designs, and greater resource efficiency. Ongoing innovation and expansion of electric mobility are consequently creating significant growth opportunities for advanced magnetic materials in transportation.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share, benefiting from extensive industrial manufacturing, electronics production, automotive development, renewable-energy expansion, and material-science capabilities. The region supports an integrated ecosystem covering magnetic materials, components, electric vehicles, industrial machinery, and electronic technologies. China is especially significant within the regional supply chain, while Japan and South Korea provide advanced technologies and specialized manufacturing capabilities. This combination of industrial capacity, technological development, and application demand continues to support widespread utilization of advanced magnetic materials.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, driven by industrial expansion, rising electronics production, electric mobility, renewable power deployment, and technological investment. Major economies including China, Japan, South Korea, and India are developing capabilities across magnetic materials, motors, power systems, and electronic components. Strong regional manufacturing networks and increasing requirements for efficient magnetic technologies are supporting innovation, capacity expansion, and broader utilization of advanced materials and rare-earth alternatives across diverse industrial applications.

Key players in the market

Some of the key players in Advanced Magnetic Materials & Rare-Earth Alternatives Market include Niron Magnetics, ZF Friedrichshafen, Daido Steel, Vacuumschmelze (VAC), Dexter Magnetic Technologies Group, Permag, TDK Corporation, Proterial, Arnold Magnetic Technologies, Shin-Etsu Chemical, Materion Corporation, Ningbo Yunsheng, Neo Performance Materials, Chara Technologies, Advanced Magnet Lab (AML), USA Rare Earth, Less Common Metals (LCM) and Evolution Metals & Technologies (EM&T).

Key Developments:

In June 2026, ZF Friedrichshafen AG and Xuzhou Construction Machinery Group signed a joint venture agreement in Friedrichshafen, Germany. The partnership aims to provide locally tailored solutions for China's agricultural machinery market and accelerate agricultural technology innovation in China. Under the agreement, the parties will establish ZF Machinery Co., Ltd., headquartered in the Xuzhou Economic and Technological Development Zone, Jiangsu Province.

In December 2025, Niron Magnetics and Moog Inc. are collaborating to bring advanced actuator solutions for guided munitions systems to market. Through this collaboration, Niron Magnetics and Moog are developing and testing advanced technologies for defense systems, while reducing the use of rare earths.

Material Types Covered:

Advanced Permanent Magnets

Soft Magnetic Materials

Rare-Earth Alternatives

Hybrid & Nanostructured Magnetic Materials

Technologies Covered:

Sintered Magnets

Bonded Magnets

Thin-Film & Coating Technologies

Additive Manufacturing & 3D Printed Magnetic Materials

Functional Uses Covered:

Motors & Generators

Sensors & Actuators

Transformers & Inductors

Wind Turbines & Energy Systems

MRI & Medical Devices

Robotics & Automation Systems

End Users Covered:

Automotive & Transportation

Electronics & Semiconductors

Energy & Utilities

Healthcare & Medical Devices

Aerospace & Defense

Industrial Manufacturing

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of 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 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034

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

Contents

1 EXECUTIVE SUMMARY

- 1.1 Market Snapshot and Key Highlights
- 1.2 Growth Drivers, Challenges, and Opportunities
- 1.3 Competitive Landscape Overview
- 1.4 Strategic Insights and Recommendations

2 RESEARCH FRAMEWORK

- 2.1 Study Objectives and Scope
- 2.2 Stakeholder Analysis
- 2.3 Research Assumptions and Limitations
- 2.4 Research Methodology
 - 2.4.1 Data Collection (Primary and Secondary)
 - 2.4.2 Data Modeling and Estimation Techniques
 - 2.4.3 Data Validation and Triangulation
 - 2.4.4 Analytical and Forecasting Approach

3 MARKET DYNAMICS AND TREND ANALYSIS

- 3.1 Market Definition and Structure
- 3.2 Key Market Drivers
- 3.3 Market Restraints and Challenges
- 3.4 Growth Opportunities and Investment Hotspots
- 3.5 Industry Threats and Risk Assessment
- 3.6 Technology and Innovation Landscape
- 3.7 Emerging and High-Growth Markets
- 3.8 Regulatory and Policy Environment
- 3.9 Impact of COVID-19 and Recovery Outlook

4 COMPETITIVE AND STRATEGIC ASSESSMENT

- 4.1 Porter's Five Forces Analysis
 - 4.1.1 Supplier Bargaining Power
 - 4.1.2 Buyer Bargaining Power
 - 4.1.3 Threat of Substitutes
 - 4.1.4 Threat of New Entrants

- 4.1.5 Competitive Rivalry
- 4.2 Market Share Analysis of Key Players
- 4.3 Product Benchmarking and Performance Comparison

5 GLOBAL ADVANCED MAGNETIC MATERIALS & RARE-EARTH ALTERNATIVES MARKET, BY MATERIAL TYPE

- 5.1 Advanced Permanent Magnets
- 5.2 Soft Magnetic Materials
- 5.3 Rare-Earth Alternatives
- 5.4 Hybrid & Nanostructured Magnetic Materials

6 GLOBAL ADVANCED MAGNETIC MATERIALS & RARE-EARTH ALTERNATIVES MARKET, BY TECHNOLOGY

- 6.1 Sintered Magnets
- 6.2 Bonded Magnets
- 6.3 Thin-Film & Coating Technologies
- 6.4 Additive Manufacturing & 3D Printed Magnetic Materials

7 GLOBAL ADVANCED MAGNETIC MATERIALS & RARE-EARTH ALTERNATIVES MARKET, BY FUNCTIONAL USE

- 7.1 Motors & Generators
- 7.2 Sensors & Actuators
- 7.3 Transformers & Inductors
- 7.4 Wind Turbines & Energy Systems
- 7.5 MRI & Medical Devices
- 7.6 Robotics & Automation Systems

8 GLOBAL ADVANCED MAGNETIC MATERIALS & RARE-EARTH ALTERNATIVES MARKET, BY END USER

- 8.1 Automotive & Transportation
- 8.2 Electronics & Semiconductors
- 8.3 Energy & Utilities
- 8.4 Healthcare & Medical Devices
- 8.5 Aerospace & Defense
- 8.6 Industrial Manufacturing

9 GLOBAL ADVANCED MAGNETIC MATERIALS & RARE-EARTH ALTERNATIVES MARKET, BY GEOGRAPHY

- 9.1 North America
 - 9.1.1 United States
 - 9.1.2 Canada
 - 9.1.3 Mexico
- 9.2 Europe
 - 9.2.1 United Kingdom
 - 9.2.2 Germany
 - 9.2.3 France
 - 9.2.4 Italy
 - 9.2.5 Spain
 - 9.2.6 Netherlands
 - 9.2.7 Belgium
 - 9.2.8 Sweden
 - 9.2.9 Switzerland
 - 9.2.10 Poland
 - 9.2.11 Rest of Europe
- 9.3 Asia Pacific
 - 9.3.1 China
 - 9.3.2 Japan
 - 9.3.3 India
 - 9.3.4 South Korea
 - 9.3.5 Australia
 - 9.3.6 Indonesia
 - 9.3.7 Thailand
 - 9.3.8 Malaysia
 - 9.3.9 Singapore
 - 9.3.10 Vietnam
 - 9.3.11 Rest of Asia Pacific
- 9.4 South America
 - 9.4.1 Brazil
 - 9.4.2 Argentina
 - 9.4.3 Colombia
 - 9.4.4 Chile
 - 9.4.5 Peru
 - 9.4.6 Rest of South America

9.5 Rest of the World (RoW)

9.5.1 Middle East

9.5.1.1 Saudi Arabia

9.5.1.2 United Arab Emirates

9.5.1.3 Qatar

9.5.1.4 Israel

9.5.1.5 Rest of Middle East

9.5.2 Africa

9.5.2.1 South Africa

9.5.2.2 Egypt

9.5.2.3 Morocco

9.5.2.4 Rest of Africa

10 STRATEGIC MARKET INTELLIGENCE

10.1 Industry Value Network and Supply Chain Assessment

10.2 White-Space and Opportunity Mapping

10.3 Product Evolution and Market Life Cycle Analysis

10.4 Channel, Distributor, and Go-to-Market Assessment

11 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES

11.1 Mergers and Acquisitions

11.2 Partnerships, Alliances, and Joint Ventures

11.3 New Product Launches and Certifications

11.4 Capacity Expansion and Investments

11.5 Other Strategic Initiatives

12 COMPANY PROFILES

12.1 Niron Magnetix

12.2 ZF Friedrichshafen

12.3 Daido Steel

12.4 Vacuumschmelze (VAC)

12.5 Dexter Magnetic Technologies Group

12.6 Permagon

12.7 TDK Corporation

12.8 Proterial

12.9 Arnold Magnetic Technologies

- 12.10 Shin-Etsu Chemical
- 12.11 Materion Corporation
- 12.12 Ningbo Yunsheng
- 12.13 Neo Performance Materials
- 12.14 Chara Technologies
- 12.15 Advanced Magnet Lab (AML)
- 12.16 USA Rare Earth
- 12.17 Less Common Metals (LCM)
- 12.18 Evolution Metals & Technologies (EM&T)

List of Tables

Table 1 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Region (2023-2034) (\$MN)

Table 2 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Material Type (2023-2034) (\$MN)

Table 3 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Advanced Permanent Magnets (2023-2034) (\$MN)

Table 4 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Soft Magnetic Materials (2023-2034) (\$MN)

Table 5 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Rare-Earth Alternatives (2023-2034) (\$MN)

Table 6 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Hybrid & Nanostructured Magnetic Materials (2023-2034) (\$MN)

Table 7 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Technology (2023-2034) (\$MN)

Table 8 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Sintered Magnets (2023-2034) (\$MN)

Table 9 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Bonded Magnets (2023-2034) (\$MN)

Table 10 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Thin-Film & Coating Technologies (2023-2034) (\$MN)

Table 11 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Additive Manufacturing & 3D Printed Magnetic Materials (2023-2034) (\$MN)

Table 12 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Functional Use (2023-2034) (\$MN)

Table 13 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Motors & Generators (2023-2034) (\$MN)

Table 14 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Sensors & Actuators (2023-2034) (\$MN)

Table 15 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Transformers & Inductors (2023-2034) (\$MN)

Table 16 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Wind Turbines & Energy Systems (2023-2034) (\$MN)

Table 17 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By MRI & Medical Devices (2023-2034) (\$MN)

Table 18 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Robotics & Automation Systems (2023-2034) (\$MN)

Table 19 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By End User (2023-2034) (\$MN)

Table 20 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Automotive & Transportation (2023-2034) (\$MN)

Table 21 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Electronics & Semiconductors (2023-2034) (\$MN)

Table 22 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Energy & Utilities (2023-2034) (\$MN)

Table 23 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Healthcare & Medical Devices (2023-2034) (\$MN)

Table 24 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Aerospace & Defense (2023-2034) (\$MN)

Table 25 Global Advanced Magnetic Materials & Rare-Earth Alternatives Market Outlook, By Industrial Manufacturing (2023-2034) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

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