

# **Samarium Cobalt Magnets Market Report by Application (Defence, Aerospace, Electronics, Medical Devices, and Others), and Region 2024-2032**

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## **Abstracts**

The global samarium cobalt magnets market size reached US\$ 574.8 Million in 2023. Looking forward, IMARC Group expects the market to reach US\$ 742.8 Million by 2032, exhibiting a growth rate (CAGR) of 2.8% during 2024-2032. The increased demand for SmCo magnets in high-temperature application due to their exceptional thermal stability, augmenting usage of SmCo magnets in medical devices, the escalating demand for electric vehicles, and the rising product adoption in the growing robotics industry are some of the factors that are propelling the market.

Samarium Cobalt (SmCo) magnets are a type of rare earth magnet that are extremely powerful and resistant to demagnetization. They are composed of an alloy of samarium and cobalt, two elements known for their capacity to retain magnetization under high temperatures and corrosive conditions. Samarium Cobalt magnets are renowned for their superior magnetic properties, including high coercivity, high energy product, and a high Curie temperature, which ensures the retention of magnetic strength even in elevated temperatures. These magnets work by aligning the electron spin of the cobalt atoms in the direction of the applied magnetic field, a characteristic that contributes to their high magnetic output.

The global market is majorly driven by the increased demand for SmCo magnets in high-temperature applications due to their exceptional thermal stability. In line with this, an escalating demand from the aerospace industry, where these magnets are utilized for their resistance to demagnetization in high vibration environments is providing an impetus to the market. Moreover, the flourishing electronics industry requiring magnets with compact size and superior performance characteristics due to the rising focus on miniaturization of electronic devices is also acting as a significant growth-inducing factor

for the market. In addition to this, rapid product utilization in the military and defense sectors for the manufacturing of smart textiles, UAVs and weaponry is creating lucrative opportunities in the market. Furthermore, the growing renewable energy sector necessitating the use of these durable magnets in wind turbines is stimulating the market.

**Samarium Cobalt Magnets Market Trends/Drivers:**  
Growing usage of SmCo magnets in medical devices

The medical industry's utilization of Samarium Cobalt (SmCo) magnets represents one of the most significant drivers in the market. As medical technology continues to advance, there is an escalating demand for more precise and effective diagnostic tools and treatments. SmCo magnets play a crucial role in this aspect due to their superior magnetic properties and resistance to demagnetization. These properties are essential in various medical applications, including Magnetic Resonance Imaging (MRI) scanners, where strong, consistent magnetic fields are required. SmCo magnets are also found in several implantable medical devices, such as heart pumps and cochlear implants, where their high resistance to demagnetization and ability to withstand biological environments are critical. Furthermore, the demand for portable medical devices is on the rise, driving the need for small yet powerful magnets. With a growing aging population globally and the increasing prevalence of chronic diseases requiring advanced medical interventions, the demand for SmCo magnets in the healthcare sector is anticipated to continue to rise, further propelling the growth of the market.

**Escalating demand for electric vehicles**

The rapid transition from internal combustion engines to electric vehicles (EVs) is another significant driver for the market. As sustainability and reducing carbon emissions become more vital, the demand for electric vehicles has skyrocketed. These vehicles often employ SmCo magnets in their electric motors due to their high magnetic strength and ability to operate efficiently at high temperatures. The superior thermal stability of SmCo magnets enables electric vehicles to deliver high performance without overheating concerns. In addition, the compactness of these magnets allows for more efficient and lighter designs, contributing to the overall performance and energy efficiency of EVs. With governments around the world introducing stringent emissions regulations and promoting the adoption of electric vehicles through various incentives, the demand for SmCo magnets in the electric vehicle industry is expected to expand significantly, reinforcing the growth of the market.

## Rising product adoption in the growing robotics industry

The increasing demand for SmCo magnets in the burgeoning robotics industry is another important market driver. The unique properties of SmCo magnets, such as their high magnetic strength, compact size, and ability to withstand harsh conditions, make them highly suitable for various robotics applications. From industrial robots that require precise motion control to advanced prosthetics that mimic human-like movements, SmCo magnets play a crucial role. Additionally, the growing trend of automation across industries, driven by the need for increased productivity, accuracy, and efficiency, is fueling the demand for more advanced robotics. This, in turn, drives the need for high-performing components including SmCo magnets. As technologies such as artificial intelligence and machine learning continue to advance, they will spur more sophisticated robotics applications, thus creating more demand for SmCo magnets. The rising investment in robotics research and development, along with the global push towards automation, indicates a strong growth potential for the market.

### Samarium Cobalt Magnets Industry Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the global samarium cobalt magnets market report, along with forecasts at the global and regional levels from 2024-2032. Our report has categorized the market based on application.

#### Breakup by Application:

- Defence
- Aerospace
- Electronics
- Medical Devices
- Others

Defence represents the largest market segment

The report has provided a detailed breakup and analysis of the market based on the application. This includes defence, aerospace, electronics, medical devices, and others. According to the report, defence represented the largest segment.

The need for more advanced and powerful defence technologies, such as radar systems and guided missile systems, fuels the demand for samarium cobalt (SmCo) magnets due to their superior magnetic strength and resistance to demagnetization. SmCo magnets are resistant to extreme conditions, which is crucial in defence

applications, as military operations often take place in challenging environments. The push for lightweight and compact equipment in defence technologies also drives the use of SmCo magnets, given their high energy density and small size. The development of electromagnetic railguns, which rely on powerful magnets to launch projectiles, is another factor boosting the demand for SmCo magnets in the defence sector.

On the other hand, the high thermal stability of SmCo magnets is particularly suited to the aerospace industry, where equipment is exposed to drastic temperature changes, thus propelling their demand. With the increasing push towards miniaturization in aerospace systems, these compact yet powerful magnets are a preferred choice. Also, they are used in the manufacturing of aircraft engines and avionics systems due to their high coercivity and energy product, thus driving their demand in the aerospace industry.

Moreover, with the increased focus on energy efficiency in electronic devices, the high energy product of SmCo magnets makes them a preferred choice. The growing trend of IoT and smart home devices, which rely on efficient and reliable components, is impelling the demand for SmCo magnets. As electronic devices continue to get smaller and more powerful, the demand for compact yet potent SmCo magnets, which facilitate miniaturization, is on the rise.

#### Breakup by Region:

- China
- USA
- Europe
- Others

China exhibits a clear dominance, accounting for the largest samarium cobalt magnets market share

The report has also provided a comprehensive analysis of all the major regional markets, which include China, United States of America (USA), Europe, and others. According to the report, China accounted for the largest market share.

China currently enjoys the leading position in the market due to the easy availability of raw materials used for manufacturing SmCo magnets. The presence of a robust manufacturing industry also propels the product demand, as they are essential components in a variety of goods, from consumer electronics to electric vehicles.

The Chinese government is focusing on developing advanced technologies, such as 5G, AI, and IoT, which require high-performing components, fuels the market. Also, China's robust automotive sector, particularly the electric vehicle segment, is a major driver for the market, given their wide application in EV motors.

The growing renewable energy sector in China, particularly wind energy, which utilizes SmCo magnets in wind turbines, also contributes to the demand. Moreover, the abundance of rare earth mineral reserves present in the country, that is crucial for producing these magnets, provides a strategic advantage in the market.

Additionally, the Chinese government is implementing favorable policies and initiatives promoting domestic high-tech industries, which further stimulate the market. Furthermore, the rapid urbanization and infrastructure development in China, which necessitate the use of advanced technology and machinery, also fuels the market demand.

#### Competitive Landscape:

Leading players in the market are actively implementing strategies to gain a competitive edge. To differentiate themselves from competitors, they are investing significantly in research and development to innovate and enhance SmCo magnets' performance, temperature stability, and efficiency. These companies are expanding their product portfolios to offer a wide range of SmCo magnets suitable for various industries and applications. Additionally, key players are optimizing their supply chains to ensure a steady flow of raw materials and cost-effective production. They are also looking to expand their geographic reach by establishing subsidiaries, distribution centers, and strategic partnerships in new regions, tapping into emerging markets. Sustainable practices, collaborations, and partnerships are being embraced by these players to access new technologies, markets, and resources.

The report has provided a comprehensive analysis of the competitive landscape in the market. Detailed profiles of all major companies have also been provided. Some of the key players in the market include:

NingBo NingGang Permanent Magnetic Materials Co., Ltd. (NGYC)

Ningbo Ketian Magnet Co., Ltd.

Arnold Magnetic Technologies Corporation

ADAMS Magnetic Products Co.

Bunting

Eclipse Magnetics Ltd.

Hangzhou Permanent Magnet Group Ltd.  
Thomas & Skinner Inc.

#### Recent Developments:

In September 2022, a new invention patent authorization of ZL 2021 1 1160274.3 was approved to NingBo NingGang Permanent Magnetic Materials Co., Ltd. The invention patent, identified by the number ZL 20211 1160274.3, involves a new method for preparing samarium cobalt (SmCo) permanent magnets that the company has legal protection for, affirming their innovative contribution to the field.

In March 2021, Arnold Magnetic Technologies Corporation announced the acquisition of Ramco Electric Motors, Inc., manufacturer of stators, rotors, and full electric motors. By acquiring Ramco, Arnold expands an already diverse product offering with industry leading electric motor solutions capabilities in applications across various markets including industrial, military and aerospace.

In October 2021, Bunting officially acquired MagDev Ltd, a UK-based magnet and magnetic assembly manufacturer. This acquisition will expand the range of magnetic solutions and technical expertise Bunting is able to offer as a global magnetics group.

#### Key Questions Answered in This Report

1. What is the size of the global samarium cobalt magnets market?
2. What are the key factors driving the global samarium cobalt magnets market?
3. What has been the impact of COVID-19 on the global samarium cobalt magnets market?
4. What is the breakup of the global samarium cobalt magnets market based on the application?
5. What are the key regions in the global samarium cobalt magnets market?

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