# Semiconductor Materials - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 199 pages | Mordor Intelligence

**AVAILABLE LICENSES:**

- Single User License $4750.00
- Team License (1-7 Users) $5250.00
- Site License $6500.00
- Corporate License $8750.00

**Report description:**

The Semiconductor Materials Market size is estimated at USD 80.79 billion in 2025, and is expected to reach USD 101.89 billion by 2030, at a CAGR of 4.75% during the forecast period (2025-2030).

Semiconductor materials represent one of the significant innovations in the electronics industry. By using materials such as silicon (Si), germanium (Ge), and gallium arsenide (GaAs), electronics manufacturers can replace traditional thermionic devices that make electronic devices heavy and expensive. Since the introduction of semiconductor devices, advanced miniaturization has progressed, and electronic devices have become more compact and mobile.

Key Highlights
- With the miniaturization trend gaining momentum in the semiconductor industry, the demand for semiconductor materials is also expected to grow as manufacturing advanced node ICs, heterogeneous integration, and 3D memory architectures require more processing steps. This would also drive higher wafer fabrication and packaging materials consumption.
- Although significant chip manufacturing companies in South Korea, such as Samsung and SK Hynix, are seeking to bolster supply chain stability, the South Korean government is investing in the domestic production of semiconductor materials and equipment to source about 50% of its materials, components, and equipment demand locally by 2030.
- Semiconductors are moving away from rigid substrates to more flexible plastic material and paper, all due to new material and fabrication discoveries. The trend toward more flexible substrates has led to numerous devices, from light-emitting diodes to solar cells and transistors. Further, the increasing production of consumer electronics devices and demand from the industrial sector for IoT and automation devices, owing to the policies of Industry 4.0, are some of the significant factors that govern the increasing demand for semiconductor materials in the global market.
- The market's growth is driven by the growing proliferation of smartphones and the high penetration of 5G mobile networks

worldwide. The increasing adoption of smart technologies in mobile phones and the rapid introduction of next-generation mobile communications standards, like LTE or 5G, are factors driving the demand for semiconductor materials. According to 5G Americas, as of 2023, there were an estimated 1.9 billion fifth-generation (5G) subscriptions worldwide. This figure is expected to increase to 2.8 billion by 2024 and 5.9 billion by 2027.
- Several companies in the market are focusing on strategic partnerships, collaborations, and developing new products or incorporating new features in the existing products to cater to the complex needs of the end users, expand their market share, and generate revenue from different regions. For instance, in September 2023, Mitsubishi Chemical announced the construction of a new semiconductor materials plant, aiming to become operational by March 2025 as the global competition in semiconductor manufacturing intensifies.
- The semiconductor industry is one of the most complex because of the several (more than 500) processing steps involved in manufacturing different products and the challenging environment faced by workers, including volatile electronics industries and unpredictable demand. Depending on the complexity of the manufacturing process, there can be up to 1,400 process steps in semiconductor wafer manufacturing alone. Transistors are formed on the bottom layer, and the process is repeated as many circuits are assembled to create the final product.
- The Russia-Ukraine War is impacting the supply chain of semiconductors, and it is a significant supplier of raw materials for producing semiconductors and electronic components, including various equipment. The war disrupted the supply chain, causing shortages and price increases for these materials, impacting manufacturers and potentially leading to higher costs for end users. Also, in the first quarter of 2023, the mobile phone industry witnessed a decline in shipments compared to the previous year due to geopolitical tensions and decreased consumer spending, which also affected the market's growth. Similarly, the US-China conflict created new challenges for the global semiconductor supply chain; it may hamper market growth in the coming years.

Semiconductor Materials Market Trends

Consumer Electronics to Hold Significant Market Share

- Consumer electronics play a significant role in driving the growth of the semiconductor materials market. With the increase in demand for smaller, faster, and more energy-efficient devices, the demand for advanced semiconductor materials also rises. The growth of consumer electronics in various regions, supported by increased internet penetration and the expansion of digital economies, has raised the number of available connected devices, including smartwatches, smart electronics appliances, smart home products, laptops, and smartphones. This has raised the demand for semiconductor materials for hardware manufacturing, driving market growth. With the advent of IoT, various end-user industries are increasingly adopting advanced consumer electronic products to enhance their operations.
- According to Cisco, the Internet of Things (IoT) has become a prevalent system by which people, processes, devices, and data connect to the Internet and each other. According to Cisco Systems, there were 4.4 billion mobile M2M connections worldwide in 2023.
- The requirement for electronic makers to extend battery life is fueling the demand for SiC semiconductors. Manufacturers of consumer gadgets are upgrading their products' batteries, driven by consumer desire for low-charging gadgets. The primary consumers of SiC semiconductors in this market are smartphones, wearable devices, and other major consumer electronics.
- The increasing adoption of smart technologies in mobile phones and the rapid introduction of next-generation mobile communications standards, like LTE or 5G, are significant factors driving the demand for semiconductor materials. For instance, in August 2023, the European Investment Bank (EIB) granted Iliad SA a new EUR 300 million loan to finance its 5G network rollout. It was expected to enable Iliad to expand the rollout of its 5G network in France. The EIB's investment priorities include financing digital economy projects, which align with the European Union's objectives of enhancing fixed and mobile ultra-fast connectivity for individuals and businesses.
- The GSMA Mobile Economy Europe 2023 report stated that 5G connectivity and services are expected to generate economic

benefits of EUR 153 billion by 2030, increasing the number of connected consumer electronic devices and fueling market growth.
- The growth of fiber optics in the regions would fuel the growth of connected smart devices and raise the demand for semiconductor raw materials. In February 2024, HFCL Limited (HFCL), a technology enterprise and integrated communications product including optical fiber cable (OFC) and solutions provider, announced its strategic expansion into Europe by setting up an OFC manufacturing plant in Poland, supporting the growth of fiber connections in the buildings and raising the demand for connected smart consumer electronic devices.
- Smartphones are among the most significant consumers of semiconductors. The smartphone industry has been very competitive in recent years. The increasing usage of smartphones is anticipated to drive the market. For instance, according to Ericsson, smartphone subscriptions are expected to reach 12 million by 2028, from 4.5 million in the previous years.

China is Expected to Witness Significant Market Growth

- The semiconductor raw materials market is proliferating in China, with many chip design companies striving for self-reliance amid an escalating US-China technology rivalry. In March 2023, the second phase of the National Integrated Circuit Industry Investment Fund Co, also known as "Big Fund II," invested heavily in semiconductor manufacturing, equipment, and related materials to deal with the US government's containment and suppression.
- The government has played a significant role in molding the country's market. For a couple of years, the Chinese government issued several new related policy measures to boost the development of its semiconductor industry. The Chinese government's "Made in China 2025" initiative aims to make its semiconductor industry reach USD 305 billion in terms of output by 2030 and meet 80% of the domestic demand. The budget of the China National Intellectual Property Administration (CNIP) targeted 2 million registrations annually by 2023, which was expected to revitalize the market.
- With the launch of 5G services in the country, the demand for smartphones, among other things, has been increasing. GSMA predicts that 5G will overtake 4G in 2024 to become the dominant mobile technology in China. The dominance of 4G and 5G in China suggests that legacy networks are being phased out. While most users have migrated to 4G and 5G, legacy networks continue to support various IoT services. However, GSMA estimates suggest legacy networks could be almost entirely shut down in China by 2025. The push toward 5G will likely propel the adoption of advanced consumer electronics and telecommunication products. This is anticipated to drive the market.
- The growth in wearable electronic devices has led to the adoption of new miniaturized chips, propelling the market's growth and increasing the demand for wafers. According to Ericsson, smartphone mobile network subscriptions are expected to reach approximately 7.8 billion by 2028.
- China's automotive sector has been increasing, and the country plays an increasingly important role in the global automotive market. The Chinese government positions the automobile industry, including the auto parts industry, as one of its key industries. According to the government, China's car production will reach 35 million vehicles by 2025.
- Manufacturing serves as a significant industry in Asia-Pacific. China's economy, being a significant contributor, is undergoing a rapid transformation with the rise in labor costs and the conventional model of migrant workers losing its sustainability. Such trends have pushed the economy to adopt automation as a part of the manufacturing processes. As per the 13th Five-year Plan of Smart Manufacturing, China aims to mainstream its intelligent manufacturing system and industry transformation by 2025. The plan, released by the Ministry of Industry and Information Technology (MIIT) and seven other departments, came as countries like the United States, Germany, and Japan pushed to increase intelligent manufacturing. According to the plan, more than 70% of large-scale Chinese enterprises would be digitalized by 2025, and over-demonstration manufacturing facilities would be built nationwide. The plan also involves strengthening research on critical technologies such as artificial intelligence, 5G, IoT, big data, and edge computing. Such initiatives would offer significant momentum to the growth of the market.

Semiconductor Materials Industry Overview

The semiconductor raw materials market is fragmented, with the presence of significant companies like BASF, LG Chem Ltd, Indium Corporation, and KYOCERA Corporation. The companies continuously invest in strategic collaborations and product developments to gain market share.

- September 2023: Electronic component maker CDIL became the first company in India to start manufacturing SiC semiconductors for high power-consuming technology products. CDIL operates manufacturing facilities and a reliability lab in Mohali and Delhi, serving industries focusing on the automotive, defense, and aerospace sectors. The company's expansion received incentive support from the Centre under the Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS). The company initiated the first phase of production of 50 million SiC components with a surface-mount packaging line and plans to ramp up it to 100 million devices.
- August 2023: TSMC, Infineon Technologies AG, Robert Bosch GmbH, and NXP Semiconductors NV collaborated to invest in European Semiconductor Manufacturing Company (ESMC) GmbH in Germany to provide advanced semiconductor manufacturing services. ESMC marked a step toward constructing a 300 mm fab to support the automotive and industrial sectors' future capacity needs. The facility is anticipated to have a monthly production capacity of 40,000 300 mm (12 inch) wafers on TSMC's 28/22 nanometer planar CMOS and 16/12 nanometer FinFET process technology, strengthening Europe's semiconductor manufacturing ecosystem. ESMC aimed to begin construction in 2024, with production targeted to commence by 2027.

Additional Benefits:

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

**Table of Contents:**

# Semiconductor Materials - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 199 pages | Mordor Intelligence

To place an Order with Scotts International:

-  - Print this form
-  - Complete the relevant blank fields and sign
-  - Send as a scanned email to support@scotts-international.com

**ORDER FORM:**

| Select license | License | Price |
|---|---|---|
| | Single User License | $4750.00 |
| | Team License (1-7 Users) | $5250.00 |
| | Site License | $6500.00 |
| | Corporate License | $8750.00 |
| | VAT | |
| | Total | |

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

| | | | |
|---|---|---|---|
| Email* | | Phone* | |
| First Name* | | Last Name* | |
| Job title* | | | |
| Company Name* | | EU Vat / Tax ID / NIP number* | |
| Address* | | City* | |
| Zip Code* | | Country* | |
| | | Date | 2025-05-05 |
| | | Signature | |