

Conductive Silicone - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Conductive Silicone Market size is estimated at USD 7.29 billion in 2024, and is expected to reach USD 10.82 billion by 2029, growing at a CAGR of greater than 8% during the forecast period (2024-2029).

COVID-19 disrupted the conductive silicone supply chain, yet demand for electronics surged due to rapid digitization and the adoption of distance learning and remote work. However, the conductive silicone market is recovering to its pre-pandemic stage as COVID-19 cases declined and businesses returned to normal.

Increasing demand for conductive silicone from electrical devices in various industries fuels market growth.

On the flip side, the high cost of raw material required for conductive silicon rubber is anticipated to restrain the market's growth over the forecast period.

Advancements in technology, particularly in conductive silicone rubber, such as microfluidic devices, are opening up new possibilities within the market.

The Asia-Pacific region dominates the conductive silicone market, owing to rising demand from the automotive and electronics & telecommunications industry.

Conductive Silicone Market Trends

Thermal Interface Materials Segment to Dominate the Market

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- The thermal interface materials segment is the dominating segment, offering adhesion to an extensive range of substrates. The high thermal conductivity of conductive silicones makes it an ideal material for various applications.
- Thermal interface material is witnessing increased demand due to their increasing application in bonding microprocessors, LED arrays, and other heat-generating components to heat sinks, ensuring an organized path for heat transfer.
- Increasing small electronic systems and rising current densities have resulted in higher operating temperatures, thereby driving the development of high-performance silicone-based TIM (Thermal Interface Materials) for heat dissipation. Thus, it will likely cause the demand for conductive silicone over the forecast period.
- Thermal Interface Materials are majorly used to fill the microscopic gaps between the heat source (such as a CPU or GPU) and the heat sink to improve the transfer of heat from the heat source to the heat sink, which can help to prevent the heat source from overheating and damaging the internals of a system. TIM is majorly used in computers, laptops, consoles, and other electronic devices (such as routers, power supplies, and amplifiers).
- The electronics segment is one of the major driving segments for the growth of the conductive silicone market, in which many companies like Apple, Dell, Samsung, and Xiaomi are expanding their smartphone and laptop sales across the globe, directly impacting the consumption of thermal interface materials like heat dissipating pastes and pads.
- According to the India Brand Equity Foundation (IBEF), the Indian telecom market experienced a 36% increase in value in offline retail during the previous year (2022) and is anticipated to maintain stable, value-driven growth in the domestic telecom market for the year 2023.
- The thermal interface materials market size rises with governments promoting start-up ecosystems as they enter the thermal interface materials and systems market. Since 2018, many companies have entered this market to innovate and expand the thermal interface materials segment, such as Thermulon, Rovilus, and U-MAP Co.,Ltd.
- In addition, the electronics & electrical segment is expected to be the fastest growing application segment in terms of volume owing to their widespread application as adhesives, sealants, and in coatings of wires & cables, along with acting as an anti-static packaging agent for electronic components.
- The heightened utilization of thermally conductive silicone rubber materials, including fluoro silicone rubber, in electronic components like sensors and printed and electronic circuit boards is expected to bring positive outcomes. This is attributed to their advantages of adequate flow, processing capabilities, and elevated thermal stability.
- The increasing trend toward miniaturization in electronic devices has underscored the importance of shielding these components from electromagnetic interference (EMI) and electrostatic dissipation (ESD). As the use of conductive silicone rubber for ESD and EMI protection continues to rise, it is expected to have a positive impact throughout the forecast period.
- Asia-Pacific countries like China, India, and Vietnam have been registering strong growth in consumer electronics, which is expected to drive the consumption of conductive silicone in the region over the forecast period.

Asia-Pacific Region to Dominate the Market

- The Asia-Pacific region stands to be the largest and fastest-growing market for conductive silicone. Factors such as rising utilization in electronics, automotive, and power generation industries have been driving the conductive silicone requirements in Asia-Pacific.
- Asia-Pacific countries like China, India, Japan, Indonesia, and Vietnam are witnessing increasing investment in power generation projects, further providing thrust to the conductive silicone market.
- Increased significance of anti-static packaging for dust control during electric charge and sustaining functionality and longevity of the electrical and electronic devices is anticipated to surge utilization of conductive silicone in electronics. Asia is the largest producer of electrical & electronic devices, with countries like China, Japan, India, And ASEAN Countries.
- China is a significant consumer of conductive silicone, used in various mobile phone components, such as keypads, EMI

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shielding, and thermal management solutions. China is one of the world's largest mobile manufacturing countries, accounting for over 30% of global production in 2022. As per Gizchina Media, the country manufactured 679 million smartphones from January 2023 to August 2023.

- The battery is shielded by silicone against short circuits and other electrical dangers. Additionally, with a high melting point, silicone is perfect for applications requiring high temperatures. In addition, silicone resists corrosion and can sustain high temperatures, making it an ideal material for producing lithium-ion batteries.
- Thermal interface materials dominate the application segment, as they offer adhesion to an extensive range of substrates, and the high thermal conductivity of conductive silicones makes them an ideal material for various applications in the automotive industry. Asian region accounts for more than half of the production of automobiles globally, with significant contributions from China, Japan, India, South Korea, and Thailand.
- Growing utilization in applications such as encapsulants & potting compounds, conformal coatings, fastening, bonding, and printing is expected to thrust the conductive silicone market.
- Hence, all such market trends are expected to drive the demand for the conductive silicone market in the region during the forecast period.

Conductive Silicone Industry Overview

The conductive silicone market is fragmented in nature. The major players (not in any particular order) include Wacker Chemie AG, DOWSIL (DOW Corning), Shin-Etsu Chemical Co., Ltd, Specialty Silicone Products, Inc., and ACC Silicones (CHT Group), among others.

Additional Benefits:

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

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