

Semiconductor Chemical Market worth \$27.38 billion by 2030- Exclusive Report by 360iResearch

The Global Semiconductor Chemical Market to grow from USD 10.55 billion in 2022 to USD 27.38 billion by 2030, at a CAGR of 12.64%.

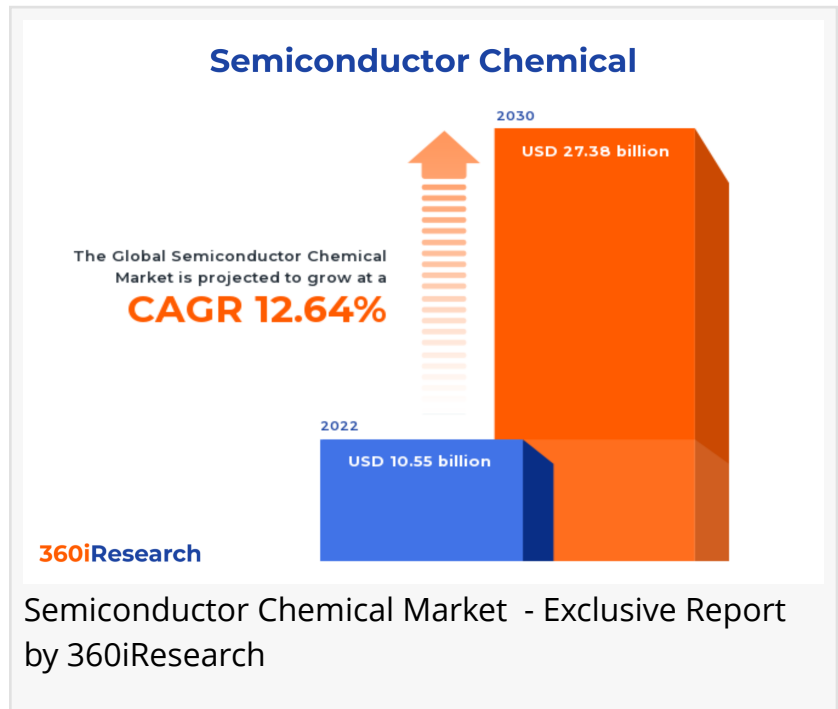
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-- The "[Semiconductor Chemical Market](#) by Type (Acid & Base Chemicals, Adhesives, High-Performance Polymers), Application (Cleaning, Doping, Etching), End-Use - Global Forecast 2023-2030" report has been added to 360iResearch.com's offering.

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A semiconductor chemical pertains to a range of chemicals extensively used in the fabrication and processing of semiconductor materials, electronic circuits, and devices. These chemicals hold a substantial role in the high-tech, rapid-paced industry as they highly contribute to the functionality and efficiency of electronic mechanisms. The rising demand for consumer electronics, rapid technological advancement, and the growth of the IT industry are driving the growth of the semiconductor chemicals market. However, regulations related to the safe usage of chemicals, environmental concerns, and high manufacturing costs are significant hindrances to the market. Nevertheless, the initiation of smart city projects, increased adoption and application of IoT devices in varied sectors, and broader semiconductor usage in the medical



industry are expected to create potential opportunities for the semiconductor chemical market.

Type: Proliferating utilization of acid and base chemicals owing to their ability to remove undesired materials

Acid and base chemicals such as hydrofluoric acid and ammonia are critical in semiconductor fabrication, mainly cleaning and etching. They are chosen based on precision in patterning and the ability to remove undesired materials. Adhesives are used in semiconductor packaging, providing mechanical reinforcement and heat dissipation. The preference for adhesives largely depends on their thermal properties, processing requirements, and durability. High-performance polymers, including polyimides, are often preferred for their high thermal stability, flexibility, and electrical insulation. They find their application in specialized areas such as probe cards and sensor chips. Solvents are used in lithographic processes and waste treatment in semiconductor manufacturing. The preference for the solvent depends on its purity, evaporation rate, and compatibility with the fabrication process. Acid & Base chemicals and solvents are predominantly needed for cleaning and etching, laying the foundation for manufacturing semiconductors. Adhesives and high-performance polymers, meanwhile, focus more on the packaging and final application of the chips.

End-Use: Burgeoning applications of semiconductor chemicals in optoelectronics

Discrete semiconductors behave as a single diode, transistor, or similar discrete device, which differs from integrated circuits. These semiconductors are less complex and are specifically designed for simple, independent use. They are primarily used in power devices and modules due to their high-voltage handling capabilities. Integrated circuits (ICs) are a group of electronic circuits on a tiny chip of semiconductor material. ICs are used in almost all electronic equipment due to their compactness, reliability, and cost-effectiveness. Optoelectronics is a subdiscipline that combines aspects of optic technology with electronics. This category includes LEDs, image sensors, and optical storage devices. Sensors, another crucial segment, convert physical measures into readings that electronic devices can interpret. They are extensive in applications, including smartphones, automotive, medical devices, and more.

Application: Evolving usage of semiconductor chemicals in cleaning and doping

Cleaning in the semiconductor industry involves using chemical agents to remove impurities and contaminants from the surface of semiconductor wafers. This process is critical as the slightest impurities could compromise the performance of the end device. Doping involves the introduction of impurities into the semiconductor to modify its properties, typically enhancing conductivity. Etching is a process used to craft the intricate patterns of integrated circuits on the semiconductor wafer. It involves removing select layers from the wafer surface, essentially 'etching' the required designs. Photoresist referencing the chemical compound that coats the semiconductor wafer that allows circuit patterning. Cleaning and doping are inclined towards maintaining semiconductor device efficiency and reliability, whereas etching and photoresists focus on formulating and enforcing the complex designs embedded in the semiconductor devices.

Regional Insights:

The Americas predominantly hold the semiconductor industry owing to their advanced technological landscape and significant investment in R&D, which initiates a robust demand for semiconductor chemicals. The EU region has shown exponential growth in the semiconductor manufacturing sector in recent years. Countries are becoming significant hubs for semiconductor chemical production. Variable purchase behavior across the region can be traced to the specific technology advancements and localization of manufacturing units. The Middle East and Africa are emerging as potential markets for semiconductor chemicals using advanced solutions in sectors such as oil, gas, and telecommunication, with governments providing incentives. APAC has a developing landscape in the market due to the presence of high-tech industries in countries that are propelling the demand, while the IT sector is fuelling growth. The latest research initiatives in the APAC countries aim to nurture advanced semiconductor technologies. The customer purchasing behavior leans towards integrated services and cost-effective solutions.

FPNV Positioning Matrix:

The FPNV Positioning Matrix is essential for assessing the Semiconductor Chemical Market. It provides a comprehensive evaluation of vendors by examining key metrics within Business Strategy and Product Satisfaction, allowing users to make informed decisions based on their specific needs. This advanced analysis then organizes these vendors into four distinct quadrants, which represent varying levels of success: Forefront (F), Pathfinder (P), Niche (N), or Vital(V).

Market Share Analysis:

The Market Share Analysis offers an insightful look at the current state of vendors in the Semiconductor Chemical Market. By comparing vendor contributions to overall revenue, customer base, and other key metrics, we can give companies a greater understanding of their performance and what they are up against when competing for market share. The analysis also sheds light on just how competitive any given sector is about accumulation, fragmentation dominance, and amalgamation traits over the base year period studied.

Key Company Profiles:

The report delves into recent significant developments in the Semiconductor Chemical Market, highlighting leading vendors and their innovative profiles. These include Adeka Corporation, AGC Chemicals Americas, Inc., Air Liquide S.A., Applied Materials, Inc., Avantor, Inc., BASF SE, Cabot Microelectronics Corporation, Chemetall GmbH, Dow Chemical Company, DOWA Electronics Materials Co., Ltd., Entegris, Inc., Entrepix, Inc., Fujifilm Holdings Corporation, Hitachi Chemical Co., Ltd., JSR Corporation, KMG Chemicals, Inc., Lam Research Corporation, Linde plc, Macronix International Co., Ltd., Merck KGaA, Mitsubishi Chemical Corporation, Nexeo Plastics, Samsung SDI Chemicals & Electronics Materials, Shin-Etsu Chemical Co., Ltd., Sumika Electronic Materials, Inc., Sumitomo Chemical Co., Ltd., Tokyo Ohka Kogyo Co., Ltd. (TOK), Versum Materials, Inc., and

Wacker Chemie AG.

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Market Segmentation & Coverage:

This research report categorizes the Semiconductor Chemical Market in order to forecast the revenues and analyze trends in each of following sub-markets:

Based on Type, market is studied across Acid & Base Chemicals, Adhesives, High-Performance Polymers, and Solvents. The Solvents is projected to witness significant market share during forecast period.

Based on Application, market is studied across Cleaning, Doping, Etching, and Photoresist. The Photoresist is projected to witness significant market share during forecast period.

Based on End-Use, market is studied across Discrete Semiconductor, Integrated Circuits (ICS), Optoelectronics, and Sensors. The Sensors is projected to witness significant market share during forecast period.

Based on Region, market is studied across Americas, Asia-Pacific, and Europe, Middle East & Africa. The Americas is further studied across Argentina, Brazil, Canada, Mexico, and United States. The United States is further studied across California, Florida, Illinois, New York, Ohio, Pennsylvania, and Texas. The Asia-Pacific is further studied across Australia, China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam. The Europe, Middle East & Africa is further studied across Denmark, Egypt, Finland, France, Germany, Israel, Italy, Netherlands, Nigeria, Norway, Poland, Qatar, Russia, Saudi Arabia, South Africa, Spain, Sweden, Switzerland, Turkey, United Arab Emirates, and United Kingdom. The Europe, Middle East & Africa commanded largest market share of 36.21% in 2022, followed by Americas.

Key Topics Covered:

1. Preface
2. Research Methodology
3. Executive Summary
4. Market Overview
5. Market Insights
6. Semiconductor Chemical Market, by Type
7. Semiconductor Chemical Market, by Application
8. Semiconductor Chemical Market, by End-Use
9. Americas Semiconductor Chemical Market

10. Asia-Pacific Semiconductor Chemical Market
11. Europe, Middle East & Africa Semiconductor Chemical Market
12. Competitive Landscape
13. Competitive Portfolio
14. Appendix

The report provides insights on the following pointers:

1. Market Penetration: Provides comprehensive information on the market offered by the key players
2. Market Development: Provides in-depth information about lucrative emerging markets and analyzes penetration across mature segments of the markets
3. Market Diversification: Provides detailed information about new product launches, untapped geographies, recent developments, and investments
4. Competitive Assessment & Intelligence: Provides an exhaustive assessment of market shares, strategies, products, certification, regulatory approvals, patent landscape, and manufacturing capabilities of the leading players
5. Product Development & Innovation: Provides intelligent insights on future technologies, R&D activities, and breakthrough product developments

The report answers questions such as:

1. What is the market size and forecast of the Semiconductor Chemical Market?
2. Which are the products/segments/applications/areas to invest in over the forecast period in the Semiconductor Chemical Market?
3. What is the competitive strategic window for opportunities in the Semiconductor Chemical Market?
4. What are the technology trends and regulatory frameworks in the Semiconductor Chemical Market?
5. What is the market share of the leading vendors in the Semiconductor Chemical Market?
6. What modes and strategic moves are considered suitable for entering the Semiconductor Chemical Market?

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