

Global Electronic Chemicals Market Outlook to 2027

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Abstracts

The Electronics industry utilized specialty chemicals in many of its applications, such as the manufacturing of Semiconductors, Printed circuits, and integrated circuits.

According to BlueQuark Research & Consulting, the global electronic chemicals market is expected to witness a considerable growth rate during the forecasted period. Factors like the growth of the global electronic chemicals market are the emerging applications such as 5G, AI, IoT, HPC, VR and strong development in ultrapure, organic chemical products for highly efficient capacitors, new smartphone displays, along with semiconductor chips for the electronic and automotive industry in the forecasted period. Further, the migration of extensive venue entertainment to smaller environments is expected to raise the consumer electronics and home modification that should positively and long-lasting effect demand electronic chemicals in the forecasted period.

Furthermore, the reductions in feature size and the ever-increasing complexity of circuits that require the purity of process chemicals used to fabricate integrated circuits are expected to boost the market for electronic chemicals. However, the stringent government regulations will be one of the most significant restraints for this market in the estimated period (rules on the use of chemicals and sustainability).

Electronic chemicals are worn to clean and dry electronic devices, and these specialty chemicals are used to manufacture semiconductors, printed circuit boards (PCB), an integrated circuit (IC). They are also used to remove minute impurities of semiconductor wafers. Electronic chemicals find significant applications in machine motion control and sensor & vision components to ensure optimal performance.

The Semiconductor industry has the biggest market share due to the rise in demand for electronic components in various technologies. The use of semiconductors in multiple sectors such as defense, aerospace, and automotive is rising for tablets, electronic appliances, computers, and smartphones. Thus, increasing the demand for such specialty chemicals and the increasing demand for the miniaturization of electronic

components is also expected to increase the market's growth over the forecasted period. Wet chemicals are extensively used in semiconductors for cleaning and etching processes. A semiconductor is a solid chemical compound or element which can conduct electricity under certain conditions depending upon the dopants added during the manufacturing process. Semiconductor devices require proper maintenance for their functionality; hence, certain electronic chemicals and materials are used to clean, etch, polish, doping, and service semiconductors. The cleaning process involves removing contaminants from the wafer surface and controlling chemically grown oxide on the wafer surface. The pollutants available could be particles, inorganic and organic compounds, and impurities. Wet etching is an etching process of solid materials in a chemical solution and using etchants or liquid chemicals to take off the substrate material. The electronic grade hydrogen peroxide has prime application in the semiconductor industry, which has grown significantly in the past years and is likely to create growth opportunities for electronic grade hydrogen peroxide in the coming years. Consequently, hydrogen peroxide is considered one of the significant growth drivers for the semiconductor industry, which is, therefore, likely to increase the demand for wet chemicals during the forecast period. The manufacturing and processing of semiconductor wafers mainly involve wet chemistry steps, where hydrogen peroxide (H₂O₂) is combined with other chemicals for cost-effective cleaning and etching. The prevalence in demand for smartphones has positively affected the Electronic Chemicals Market. The semiconductor segment is bifurcated into integrated circuits and printed circuit boards. The technological advancements in the electronics industry affect the semiconductor industry. For instance, upcoming technologies like artificial intelligence are likely to drive the segment's market over the forecasted period. The establishment and development of corporate companies will exert a considerable demand-pull on electronic devices such as computers, smartphones which rely heavily on electronic chips and circuits. Further, the growth of the IT hardware sector also implicates the rise in demand for electronic materials and chemicals.

The Asia-Pacific region is awaited to be the most significant global electronic chemicals market due to low manufacturing costs and the demand for electric chemicals, primarily due to the increase in semiconductors and microelectronics production. The countries in the Asia Pacific region that dominated the market are China, Japan, South Korea, and Malaysia. Silicon wafers have an elevated market share among various electronic chemicals due to the increasing demand for electronic devices like computers and smartphones (these devices have integrated circuits, and silicon wafers are a vital component for its production). The Silicon wafers are a thin slice of semiconductors made from crystalline silicon and a key element in the fabrication of integrated circuits and serve as a substrate for microelectronics devices. The primary use of silicon wafers

is in integrated circuits, the basic building block of any electronic device, such as computers and smartphones. Other benefits include tire pressure systems and solar cells. The vast acceptance of nanotechnology has contributed to the market shift toward MEMS & NEMS devices. The smaller size, lighter weight, lower power consumption, and cheaper fabrication costs associated with nano-devices have made them acceptable globally. With various technological advancements, the recent commercialization of nano-based devices has boosted the market potential for photoresist and photoresist ancillaries. For instance, Intel is rushing toward adopting new technology based on 20nm from 28nm, thus enabling the demand for nanomaterials and, in turn, electronic chemicals and materials in the semiconductor industry. Hence, the market situation in the region is anticipated to boost the demand in the Electronic chemicals market through the forecasted period.

The global electronic chemicals market is highly fragmented. Major players in the market were found to be Linde PLC, The Dow Chemical Company, DuPont, Cabot microelectronics, Hitachi Chemicals, Air Liquide, Solvay, BASF SE, among others.

In April 2021, Mint Innovation, a tech firm based in Auckland, New Zealand, has recently developed biological processes for improving valuable metals from electronic waste.

Global Electronic Chemicals Market report provides deep insight into the current and future state of the electronic chemicals market across various regions. The study comprehensively analyzes the electronic chemicals market by segmenting based on type (Specialty gases, CMP Slurries, Conductive Polymers, Photoresist Chemicals, Low K Dielectrics, Silicon Wafers, PCB Laminate), applications (Semiconductors, Integrated and Printed Circuits, and others), and Geography (Asia-Pacific, North America, Europe, South America, and Middle-East and Africa). The report examines the market drivers and restraints, along with the impact of Covid-19 on market growth. The study covers & includes emerging market trends, developments, opportunities, and challenges in the industry. This report also covers extensively researched competitive landscape sections with profiles of prominent companies, including their market shares and projects.

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