

Electroless Plating in WLCSP: A Deep Dive into Market Dynamics

WLCSP Electroless Plating Market Projected to Hit \$2.88 Billion By 2027

WILMINGTON, DE, UNITED STATES, January 2, 2025 /EINPresswire.com/ --The global <u>WLCSP electroless plating</u> <u>market</u> size is expected to witness considerable growth due to the emergence of enhanced semiconductor technologies and solutions in the global market. The WLCSP electroless plating industry is projected to witness significant growth, especially in emerging economies such



as India, Mexico, Philippines, Oman, Jordan, and others, owing to the development of semiconductor manufacturing units in the regions. Allied Market Research, titled, "WLCSP Electroless Plating Market By Type and End Use: Opportunity Analysis and Industry Forecast, 2020-2027", the global WLCSP electroless plating market was valued at \$1.77 billion in 2019, and

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The rise in the impending need for circuit miniaturization & microelectronic devices and the cost-effectiveness of WLCSP electroless coating drive the growth of the WLCSP Electroless Plating Market." is projected to reach \$2.88 billion by 2027, registering a CAGR of 5.9% from 2020 to 2027.

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WLCSP electroless plating involves metal ions within a chemical solution. A uniform layer is deposited onto the surface of the semiconductor wafer by using an electroless plating reaction. This process involves only chemical reactions, and no electric current is required. The main advantage of electroless plating is that a uniform deposit is

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achieved every time the reaction takes place.

In addition, electroless coating penetrates into narrow blind holes, to ensure no gas entrapment.

It is used for a wide range of engineering applications where chemical and wear resistance and high hardness are required. Electroless plating is used in various applications, such as plastic injection molds, die-casting molds, glass production molds, and salvage of mold parts.

According to <u>WLCSP electroless plating market trends</u>, WLCSP electroless plating is a type of surface finish deposition method in electronic packaging. With advancements in electronic products, the industry is shifting toward this process on the basis of its advantages. However, the WLCSP electroless plating process is unstable. Its stability fully depends on the substrate material, the pretreatment process, the type of solution used, and the pH and temperature during plating.

WLCSP electroless plating is less porous than any other electroplates and provides a barrier of corrosion to protect the metal. This plating technology provides large flexibility of thickness and volume of the plating, which easily fills the pits on the metal surface of the semiconductor wafer. This allows for a wider variety of electronic parts, which need to be coated or plated through electroless plating with a uniform surface. In addition, electroless nickel plating provides better corrosion protection than other plating techniques in the industry.

Furthermore, features such as less porous, high thermal conductivity, as well as high electrical and magnetic conductivity of WLCSP electroless plating provide better shielding capabilities as against the traditional plating process. This majorly drives the growth of the WLCSP electroless plating market share globally.

In addition, WLCSP electroless plating is applied with zero or very little comprehensive stress. No electricity is required in this plating or coating process. The entire process takes place through a chemical reaction. As no electricity is required in the coating process, the accuracy level of the process is quite high, even with less equipment. These factors promote the cost-effectiveness of WLCSP electroless plating. This type of plating requires less cost as compared to electroplating, which lowers its cost. In addition, the requirement of no external current for the coating process makes it a convenient process and majorly drives the WLCSP electroless plating market growth.

According to the <u>WLCSP electroless plating market forecast</u>, North America is one of the key contributors to the WLCSP electroless plating market owing to the increase in several electronics, automotive, and machinery applications, which fuels the demand for the WLCSP electroless plating in the region. The need for intelligent and smart devices and technology platforms by different industries has increased the use of advanced packaging solutions, which creates demand for WLCSP electroless plating.

Moreover, the use of microcontrollers and microprocessors in consumer electronics and electric vehicles is expected to drive the market for WLCSP electroless plating during the forecast period.

The early adoption of new technology and the presence of different U.S.-based companies facilitate the exploration of newer applications of the technologies. In the highly fragmented market, companies have adopted merger and acquisition strategies to increase their market share.

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- By Type, the Nickel segment generated the highest revenue in 2019.
- By End Use, the Electronics segment generated the highest revenue in 2019.

The key players profiled in the report include Atotech Deutschland GmbH, ARC Technologies, Inc., MacDermid, Inc., KC Jones Plating Company, Okuno Chemical Industries Co., Ltd. COVENTYA International, C. Uyemura & Co., Ltd., Nihon Parkerizing Co., Ltd., ERIE PLATING COMPANY, and Bales Metal Surface Solutions (Bales). These key players have adopted strategies, such as product portfolio expansion, mergers & acquisitions, agreements, geographical expansion, and collaborations, to enhance their market penetration.

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