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Global Photoresist for Semiconductor Packaging Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global Photoresist for Semiconductor Packaging market size is expected to reach $ 552 million by 2032, rising at a market growth of 9.4% CAGR during the forecast period (2026-2032).

Photoresists for semiconductor packaging are liquid photosensitive polymer materials used in back-end semiconductor packaging and advanced packaging processes to form temporary lithographic patterns for bumping, RDL, Cu pillar, micro-bump, TSV, UBM, WL-CSP, flip-chip, fan-out WLP and 2.5D/3D packaging interconnect structures. These materials are mainly liquid positive-tone and negative-tone thick-film photoresists processed through spin coating, soft bake, exposure, development, electroplating, etching and stripping. Positive-tone packaging photoresists typically emphasize high resolution, rectangular profiles, easier stripping and compatibility with plating processes, while negative-tone packaging photoresists emphasize thick-film formation, exposure throughput, broad process latitude and plating resistance. JSR’s THB negative-tone series is publicly positioned for metal plating and bumping processes, with products including THB-151N, THB-126N and THB-111N; TOK’s positive-tone thick-film packaging resists are used for Cu pillar, TSV memory microbumps and Cu/Ni/SnAg plating applications; Merck KGaA’s AZ photoresist platform covers integrated-circuit, thick-film and related lithographic applications, with AZ P4620 having documented use in copper plating patterning.

Photoresists for semiconductor packaging have evolved from auxiliary imaging materials in conventional packaging into critical process materials for advanced packaging interconnect formation. Flip chip, WL-CSP, fan-out WLP, 2.5D/3D packaging, HBM and chiplet architectures are increasing RDL complexity, reducing bump pitch and expanding the use of Cu pillars and micro-bumps, which raises the requirements for film-

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thickness uniformity, lithographic resolution, sidewall profile, plating resistance and stripping cleanliness. Negative-tone photoresists are well suited to thick-film plating masks, bumping and high-aspect-ratio structures, with JSR's THB-151N, THB-111N and THB-126N representing key reference products in the THB platform. Positive-tone photoresists emphasize resolution, rectangular profiles, removability and plating compatibility in RDL, Cu pillar, micro-bump and WL-CSP applications, with TOK and Merck KGaA among the representative suppliers and TWC300, TKM7000 and AZ 4620 serving as key product samples for positive-tone packaging photoresist research. TOK's official materials show positive-tone thick-film resists supporting 20–65 ?m film thickness, Cu/Ni/SnAg plating, Cu pillar BGA and TSV memory microbumps; JSR's THB series publicly covers Au bump, Cu/Ni/Solder ?-bump, Cu RDL, fine RDL and high Cu pillar applications.

The current market structure is characterized by international leadership in high-end products and accelerating qualification by Chinese suppliers. JSR, TOK and Merck KGaA have accumulated strong capabilities in negative thick-film resists, positive thick-film resists, RDL resists and bump plating resists. Their competitiveness is not limited to resin, photoactive compound, solvent and additive formulation; it also reflects long-term co-optimization with packaging customers' plating, development, stripping and cleaning windows. Chinese suppliers are building more complete local supply capability around positive and negative packaging photoresists, developers, etchants and strippers. Aisen Semiconductor Material publicly lists positive photoresist, negative photoresist, developer, Cu etchant and stripper products for wafer / advanced packaging applications, and its negative photoresist for advanced packaging is described with single-coating film thickness up to 80 ?m, high resolution, good adhesion and high tolerance. As China's advanced packaging, wafer-level packaging, power-device packaging and domestic OSAT capacity continue to expand, local packaging photoresists are likely to achieve initial substitution first through domestic customer qualification, mature-package upgrading and selected advanced packaging process nodes.

The industry's development trajectory will be shaped by high-density interconnect scaling, localization of advanced packaging materials, cost optimization and deeper co-optimization across process windows. AI/HPC, HBM, 2.5D/3D integration, fan-out wafer-level packaging and chiplet-based architectures are shifting semiconductor packaging from a protective back-end step toward a system-level high-density interconnect platform. SEMI highlights 2.5D/3D integration, fan-out wafer-level packaging, chiplet architectures and AI/HPC system integration as key advanced packaging directions. Policy support across major semiconductor regions continues to focus on advanced

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packaging, materials localization and supply-chain resilience, while China's substitution demand is especially visible in g-line/i-line thick-film resists, negative bumping resists, positive RDL/Cu pillar resists and packaging wet-process chemicals. Product development will increasingly target thicker films, finer pitch, higher aspect ratio, lower residue, broader plating compatibility and improved batch-to-batch consistency. Supplier competition will therefore move beyond single-material supply toward system-level capability across photoresist formulation, developer and stripper compatibility, plating-process matching and customer-line qualification.

This report studies the global Photoresist for Semiconductor Packaging production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for Photoresist for Semiconductor Packaging and provides market size (US$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of Photoresist for Semiconductor Packaging that contribute to its increasing demand across many markets.

Highlights and key features of the study
Global Photoresist for Semiconductor Packaging total production and demand, 2021-2032, (K Gallon)
Global Photoresist for Semiconductor Packaging total production value, 2021-2032, (USD Million)
Global Photoresist for Semiconductor Packaging production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (K Gallon), (based on production site)
Global Photoresist for Semiconductor Packaging consumption by region & country, CAGR, 2021-2032 & (K Gallon)
U.S. VS China: Photoresist for Semiconductor Packaging domestic production, consumption, key domestic manufacturers and share
Global Photoresist for Semiconductor Packaging production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (K Gallon)
Global Photoresist for Semiconductor Packaging production By Photoresist Tone, production, value, CAGR, 2021-2032, (USD Million) & (K Gallon)
Global Photoresist for Semiconductor Packaging production By Packaging Process Step, production, value, CAGR, 2021-2032, (USD Million) & (K Gallon)

This report profiles key players in the global Photoresist for Semiconductor Packaging

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market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include TOK, JSR, Qnity, Merck KGaA (AZ), Shin-Etsu Chemical, Jiangsu Aisen Semiconductor Material, Allresist GmbH, KemLab™ Inc, Everlight Chemical, NEPES Corporation, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World Photoresist for Semiconductor Packaging market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (K Gallon) and average price (USD/Gallon) by manufacturer, By Photoresist Tone, and By Packaging Process Step. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

Global Photoresist for Semiconductor Packaging Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

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Global Photoresist for Semiconductor Packaging Market, Segmentation By Photoresist Tone:

Positive-tone Photoresist

Negative-tone Photoresist

Global Photoresist for Semiconductor Packaging Market, Segmentation By Package Platform:

Flip Chip Packaging Photoresist

Wafer-Level Packaging Photoresist

2.5D / 3D Integration Photoresist

Other

Global Photoresist for Semiconductor Packaging Market, Segmentation By End-use:

High-performance Computing / AI Packaging

HBM / Advanced Memory Packaging

Mobile / Consumer Advanced Packaging

Others

Global Photoresist for Semiconductor Packaging Market, Segmentation By Packaging Process Step:

Bump / Cu Pillar Formation

RDL Formation

Other

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Companies Profiled:

TOK

JSR

Qnity

Merck KGaA (AZ)

Shin-Etsu Chemical

Jiangsu Aisen Semiconductor Material

Allresist GmbH

KemLab™ Inc

Everlight Chemical

NEPES Corporation

Futurrex, Inc.

Key Questions Answered:
1. How big is the global Photoresist for Semiconductor Packaging market?
2. What is the demand of the global Photoresist for Semiconductor Packaging market?
3. What is the year over year growth of the global Photoresist for Semiconductor Packaging market?
4. What is the production and production value of the global Photoresist for Semiconductor Packaging market?
5. Who are the key producers in the global Photoresist for Semiconductor Packaging market?
6. What are the growth factors driving the market demand?

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8 MARKET ANALYSIS BY PACKAGING PROCESS STEP

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