Semiconductor Advanced Packaging Materials Market Size & Share Analysis - Growth Trends and Forecast (2026 - 2031)

> **Industry:** Electronic Chemicals & Catalysts (Chemicals & Materials)
> **Source:** https://www.mordorintelligence.com/industry-reports/semiconductor-advanced-packaging-materials-market
> **Scraped Date:** 2026-09-17

Executive Market Summary

Market Metric	Details
Base Market Size	USD 20.11 billion
Projected Forecast (2031)	USD 20.11 billion
Growth Rate (CAGR)	9.06 %
Largest Market Region	N/A
Fastest-Growing Region	N/A

Market Visualizations & Infographics

Comprehensive Research Analysis

Overview Points List Flex 49 Share Feature End

Market OverviewStudy Period | 2021 - 2031 |
Market Size (2026) | USD 20.11 Billion |
Market Size (2031) | USD 31.03 Billion |
Growth Rate (2026 - 2031) | 9.06 % |
Fastest Growing Market | Asia-Pacific |
Largest Market | Asia-Pacific |
Market Concentration | Medium |
Major Players*Disclaimer: Major Players sorted in no particular order

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Market Overview

Semiconductor Advanced Packaging Materials Market Analysis by Mordor IntelligenceThe semiconductor advanced packaging materials market size is valued at USD 18.56 billion in 2025 and is estimated to grow from USD 20.11 billion in 2026 to USD 31.03 billion by 2031, at a CAGR of 9.06% during the forecast period (2026-2031). The semiconductor advanced packaging materials market is expanding as transistor scaling alone no longer delivers the required performance gains. AI accelerators, high-bandwidth memory stacks, and multi-chiplet designs are increasing de

mand for films, underfills, encapsulants, and thermal materials. Foundries and outsourced semiconductor assembly and test providers are prioritizing materials that have passed process qualifications. This shift moves competition from bulk capacity to collaborative material development and faster product validation. Supply commitments for specialized inputs can limit production expansion, even when packaging capacity is available.

Key Report Takeaways* By material type, substrates held 41.12% of the semiconductor advanced packaging materials market share in 2025, while die attach materials are forecast to grow at a CAGR of 9.53% through 2031.
* By packaging technology, flip-chip held 36.67% of the semiconductor advanced packaging materials market share in 2025, while 2.5D and 3D Integrated Circuit (IC) packaging are forecast to grow at a CAGR of 11.04% through 2031.
* By application, logic and AI processors held 38.74% of the semiconductor advanced packaging materials market share in 2025 and are forecast to grow at a CAGR of 10.59% through 2031.
* By geography, Asia-Pacific held 39.18% of the semiconductor advanced packaging materials market share in 2025 and is forecast to grow at a CAGR of 9.88% through 2031.

Key Market Trends

Market Trends and InsightsDrivers Impact Analysis of Semiconductor Advanced Packaging Materials Market*Drivers | (~) % Impact on CAGR Forecast | Geographic Relevance | Impact Timeline |
AI and HBM Package Complexity Increasing Materials Content | +2.8% | Global, with early gains in Taiwan, South Korea, and the U.S. hyperscale supply chains | Short term (≤ 2 years) |
Heterogeneous Integration and Chiplet Adoption | +1.8% | Global, strongest in Asia-Pacific and North America | Medium term (2-4 years) |
Miniaturization, Higher I/O Density, and Faster Signal Transmission | +1.0% | Global, especially Japan and Taiwan | Medium term (2-4 years) |
Automotive Electrification and Advanced Driver-Assistance Systems (ADAS) Reliability Requirements | +0.9% | Europe, Japan, South Korea, and the United States | Medium term (2-4 years) |
Ajinomoto Build-up Film (ABF) and Low-Loss Material Qualification for Large AI Packages | +1.4% | Global, with supply concentrated in Japan | Short term (≤ 2 years) |
Thermal Interface Material (TIM) 1.5 and Package-Level Thermal Innovation | +0.7% | Global, with innovation in Japan and the United States | Medium term (2-4 years) |
Source: Mordor Intelligence |

Competitive Landscape

Competitive Landscape

The semiconductor advanced packaging materials market is moderately fragmented. Japanese suppliers set specifications across dielectric films, molded underfill, non-conductive film, and epoxy molding compounds. Foundries, hyperscalers, and outsourced semiconductor assembly and test providers increasingly use co-development agreements to select material partners early. Resonac opened its US-JOINT R&D center in Silicon Valley on April 20, 2026, with 12 member companies, including NAMICS and AMD. The consortium aims to reduce concept validation timelines from six months to one month, providing members with a faster path from material development to customer evaluation.

Opportunities include glass core substrates, panel-level organic interposers, and per- and polyfluoroalkyl substances (PFAS)-free dielectric reformulation. These areas create entry points for suppliers that do not already lead established material categories. Shin-Etsu Chemical is developing excimer laser-based equipment using dual-damascene process technology for package substrate manufacturing.

This approach could reduce the need for conventional silicon interposers in certain 2.5D applications. Samsung Electro-Mechanics formed a KRW 480 billion joint venture (USD 310 million) with a Sumitomo Chemical Group unit to manufacture glass cores for next-generation substrates. This move integrates materials more closely associated with substrate production. AT&S is also advancing glass core substrates for AI, high-performance computing, and photonics.

Competition increasingly depends on the integration of materials and equipment within qualified manufacturing processes. Suppliers must meet electrical, mechanical, thermal, and traceability requirements simultaneously. Long qualification cycles support incumbent suppliers, but they can also slow the adoption of improved formulations. Companies that offer qualified materials for large AI packages can benefit from limited supply alternatives. New Korean and Chinese entrants are targeting encapsulants and build-up films to reduce reliance on Japanese supply. Their ability to gain market share will depend on customer process evaluation and reliability outcomes. Therefore, the semiconductor advanced packaging materials market has concentrated specialized material categories and active competition across substrate production. This mix supports a moderate concentration profile rather than a single dominant structure.

Semiconductor Advanced Packaging Materials Industry Leaders* Ajinomoto Fine-Techno Co.,Inc.

* IBIDEN

* Unimicron

* Henkel AG & Co. KGaA

* Shin-Etsu Chemical Co., Ltd.

* *Disclaimer: Major Players sorted in no particular order

Component Component 3 Scope Of The Report Bottom

Global Semiconductor Advanced Packaging Materials Market Report ScopeSemiconductor advanced packaging materials include specialized chemical, organic, and metallic substances that interconnect, protect, and thermally manage multiple chips (dies) or chiplets within a single electronic package.

The semiconductor advanced packaging materials market is segmented by material type, packaging technology, application, and geography. By material type, the market is segmented into substrates, die attach materials, underfill materials, encapsulation materials, and others (thermal interface materials, solder materials, bonding materials, build-up films and other packaging materials). By packaging technology, the market is segmented into flip-chip packaging, fan-out packaging (FOWLP/FOPLP), 2.5D and 3D IC packaging, and others (wafer-level CSP, system-in-package, embedded-die, silicon bridge and hybrid bonding). By application, the market is segmented into logic and AI processors, memory devices, RF, analog and power devices, and others (MEMS and sensors, photonics and optoelectronics). The report also covers market size and forecasts for semiconductor advanced packaging materials across 17 countries in major regions. The market sizes and forecasts are provided in terms of value (USD).

By Material TypeSubstrates |
Die Attach Materials |
Underfill Materials |
Encapsulation Materials |
Others (Thermal Interface Materials, Solder Materials, Bonding Materials, Build-Up Films and Other Packaging Materials) |

Segmentation Accordion Item

By GeographyAsia-Pacific | China |
 | India |
 | Japan |
 | South Korea |
 | Rest of Asia-Pacific |
North America | United States |
 | Canada |
 | Mexico |
Europe | Germany |
 | United Kingdom |
 | France |
 | Italy |
 | Rest of Europe |
South America | Brazil |
 | Argentina |
 | Rest of South America |
Middle East and Africa | Saudi Arabia |
 | South Africa |
 | Rest of Middle East and Africa |

Frequently Asked Questions

What is current market size of Semiconductor Advanced Packaging Materials Market?

The semiconductor advanced packaging materials market size is valued at USD 18.56 billion in 2025 and is estimated to grow from USD 20.11 billion in 2026 to USD 31.03 billion by 2031, at a CAGR of 9.06% during the forecast period (2026-2031).

Which material type holds the largest share?

Substrates held 41.12% share in 2025 because they provide core structural and electrical routing functions. AI server package formats require more substrate area and additional layers, increasing the consumption of ABF buildup films and related materials.

Which packaging technology is growing the fastest?

2.5D and 3D IC packaging is forecast to grow at an 11.04% CAGR from 2026 to 2031. Its designs require material systems with controlled dielectric properties, low thermal expansion mismatch, and compatibility with through-silicon-via processes.

Which application segment is expanding most rapidly?

Logic and AI processors lead, both at 38.74% in 2025, and grow at a 10.59% CAGR. GPUs, ASICs, and HBM-enabled systems use more underfill, encapsulant, and thermal interface material as compute density rises. This segment is the largest direct-demand center for the semiconductor advanced-packaging materials market.