Global Semiconductor Packaging Materials Market to Reach $20.8 Billion by 2024, SEMI and TechSearch International Report

MILPITAS, Calif. — July 28, 2020 — The global semiconductor packaging materials market will track chip industry growth to expand from $17.6 billion in revenue logged in 2019 to $20.8 billion in 2024, a 3.4 percent Compound Annual Growth Rate (CAGR), SEMI and TechSearch International forecast in the Global Semiconductor Packaging Materials Outlook released today. A number of semiconductor industry growth drivers will power the surge including big data, high-performance computing (HPC), artificial intelligence (AI), edge computing, advanced memory, the 5G infrastructure build-out, 5G smartphone adoption, growth of electric vehicle adoption and enhanced safety features for automobiles.

Packaging materials are key to the growth of these applications, enabling advanced packaging technologies that undergird the higher performance, reliability and integration of next-generation chips.

Laminate substrates, the largest materials segment, will see a CAGR of over 5 percent, driven by demand for system-in-package (SIP) and high-performance devices. Wafer-level packaging (WLP) dielectric will register the highest growth with a 9 percent CAGR over the forecast period. The trend towards smaller, thinner packaging will dampen growth of leadframes, die attach, and encapsulant materials, though new technologies are being developed to enhance performance.

With the steady advance of semiconductor packaging technology innovation, the next several years are expected to present several areas of opportunity in the materials market including:

- New substrate designs to support narrow bump pitch with higher density
- Low $D_k$ and $D_f$ laminate materials for 5G mmWave applications
- Coreless structure based on a modified leadframe technology called Molded Interconnect Solution/System (MIS)
- Mold compounds to provide underfill for copper pillar flip chip
- Smaller fillers and narrower particle size distribution needed in resin materials to address narrow gaps and fine pitch flip chip
- Die attach materials with no-to-low resin bleed, no-to-low outgassing, and processed within <5 µm placement
- Dielectrics with lower dielectric loss ($D_f$) required for higher frequency applications such as 5G
- Void-free deposition and low-overburden deposition required for TSV plating

Other growth areas highlighted in the report’s forecast period from 2019 to 2024 include:

- The global laminate substrate market for IC packages is expected to log a 5 percent CAGR based on square meters of materials processed.
- Overall leadframe shipments are forecast to see a CAGR of just over 3 percent, with LFCSP (QFN type) registering the strongest unit growth with a CAGR of nearly 7 percent.
- Encapsulation material revenue will register a CAGR of just under 3 percent, growth driven by rising demand for smaller, thinner packaging form factors.
Die attach material revenue will grow at a CAGR of nearly 4 percent.
Solder ball revenue will expand at a CAGR of 3 percent.
The WLP dielectrics market is expected to increase by, a 9 percent CAGR.
The wafer-level plating chemical market is forecasted at a CAGR of over 7 percent.

The *Global Semiconductor Packaging Materials Outlook* is a comprehensive market research study on the semiconductor packaging materials market conducted by **TechSearch International** and SEMI or its partner **TECHCET LLC**. The 2020 outlook is the ninth edition of the report. Interviews were conducted with more than 100 semiconductor manufacturers, packaging subcontractors, fabless semiconductor companies, and packaging material suppliers. The report covers the following semiconductor packaging materials segments:

- Substrates
- Leadframes
- Bonding wire
- Encapsulants
- Underfill materials
- Die attach
- Solder balls
- Wafer-level package dielectrics
- Wafer-level plating chemicals

For more information and to purchase the report, please visit the [SEMI Global Semiconductor Packaging Materials Outlook](#) web page.

**About TechSearch International**
**TechSearch International Inc.** was founded in 1987 as a technology licensing and consulting company specializing in emerging semiconductor packaging trends. Multi- and single-client services encompass technology licensing, strategic planning, and market technology analysis. Research topics include flip chip, wafer-level packaging, CSPs, BGAs, system-in-package (SiP), fan-in and FO-WLPs, and semiconductor packaging materials.

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