

# Adhesives\_Sealants

## Weekly Intelligence Report

2026-07-19 | 19 articles | 8 countries

troy-technical.jp

This Week's Keyword

## Advanced Packaging

AI/EV drive demand for advanced materials

19

articles

Total Articles

8

countries

Source Countries

83

%

Packaging Validation Cut

230

°C

Max Heat Resistance

### All 19 Articles This Week — 5-Axis Evaluation Matrix

How to read columns — Tech Novelty: degree of breakthrough Market Proximity: closeness to commercialization Market Impact: industry-wide effect Data Reliability: quantitative data & peer review US/EU Relevance: direct impact on US/European companies & supply chains

| #   | Article Title            | Type               | Tech Novelty                                                       | Market Proximity                                                   | Market Impact                                                      | Data Reliability                                                   | US/EU Relevance                                                    | Summary                                                                                                                |
|-----|--------------------------|--------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| #01 | Hoenle Underfill 8205    | New Product        | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | Hoenle launches Structalit 8205 underfill for advanced flip-chip/BGA, withstanding 1,000 thermal cycles.               |
| #02 | Master Bond UV26DCMed    | New Product        | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | Master Bond unveils ISO 10993-5 biocompatible dual-cure adhesive for reusable medical devices.                         |
| #03 | Micron US Investment     | Corporate Strategy | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | Micron commits \$3B to fortify US semiconductor ecosystem, including \$500M in GlobalWafers for 300mm silicon.         |
| #04 | Resonac US-JOINT         | Consortium         | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | Resonac-led US-JOINT consortium launches in Silicon Valley to cut advanced packaging validation by 83%.                |
| #05 | H.B. Fuller Acquires AMS | Corporate Strategy | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | H.B. Fuller acquires UK-based Advanced Medical Solutions, expanding medical adhesives segment for \$55M synergy.       |
| #06 | Syensqo US Expansion     | Capacity Expansion | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | Syensqo breaks ground on multi-million dollar US expansion, boosting aerospace adhesives production by over 30%.       |
| #07 | Master Bond USP Class VI | Product Line       | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | Master Bond strengthens USP Class VI compliant adhesive line for disposable and reusable medical devices.              |
| #08 | Jowat Korea Subsidiary   | Corporate Strategy | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | German industrial adhesives giant Jowat establishes South Korean subsidiary to boost market presence.                  |
| #09 | Bosch SiC Fab US         | Investment         | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | Bosch secures \$225M US funding for \$2B SiC semiconductor fab conversion in California, boosting domestic production. |
| #10 | Aduro HCT Recycling      | Applied Research   | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | Aduro and ECOCE launch HCT testing in Mexico for flexible plastic packaging waste, recovering liquid hydrocarbons.     |
| #11 | TSMC US \$265B Invest    | Corporate Strategy | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | TSMC commits additional \$100B to US semiconductor manufacturing and packaging, totaling \$265B for 12 facilities.     |
| #12 | Master Bond UV16Med-FD   | New Product        | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div><div></div><div></div></div> | Master Bond unveils UV16Med-FD, a UV curable epoxy with fluorescent dye for medical devices, ISO 10993-5 compliant.    |

| #   | Article Title            | Type               | Tech Novelty | Market Proximity | Market Impact | Data Reliability | US/EU Relevance | Summary                                                                                                               |
|-----|--------------------------|--------------------|--------------|------------------|---------------|------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------|
| #13 | AI Fuels Adv Packaging   | Market Analysis    | ●●○○○<br>○   | ●●●●●<br>●       | ●●●●●<br>●    | ●●●○○<br>○       | ●●●●●<br>●      | AI fuels 'golden age' of advanced packaging; Amkor-TSMC CoWoS deal strengthens US supply chain, ASE builds 6 fabs.    |
| #14 | AI & EVs Drive Semi      | Market Overview    | ●○○○○<br>○   | ●●●●●<br>●       | ●●●●●<br>●    | ●●○○○<br>○       | ●●●●●<br>●      | AI and EVs drive 2026 semiconductor market, with HBM and advanced manufacturing nodes as key growth themes.           |
| #15 | BYK Acquires Radar Dome  | Corporate Strategy | ●○○○○<br>○   | ●●●●●<br>●       | ●●○○○<br>○    | ●●●○○<br>○       | ●●●●●<br>●      | BYK acquires radar dome measurement system company, bolstering presence in autonomous driving market.                 |
| #16 | Graphite for NEV Battery | New Product        | ●●●○○<br>○   | ●●●●●<br>○       | ●●●●●<br>○    | ●●●●●<br>○       | ●●●●●<br>○      | Graphite proves essential for NEV battery thermal management, cutting peak temperatures by up to 35%.                 |
| #17 | 230°C Epoxy EME-G785     | New Material       | ●●●●●<br>○   | ●●●●●<br>○       | ●●●●●<br>○    | ●●●●●<br>○       | ●●●●●<br>○      | New 230°C high-heat-resistant epoxy encapsulation material (EME-G785) boosts SiC power module applications.           |
| #18 | SEMI Adv Packaging       | Market Overview    | ●○○○○<br>○   | ●●●●●<br>●       | ●●●●●<br>●    | ●●○○○<br>○       | ●●●●●<br>●      | SEMI Advanced Packaging Summit 2026 highlights HBM and 2.xD packaging for AI/HPC performance and power efficiency.    |
| #19 | Sheen Thermal Guide      | Application Guide  | ●●○○○<br>○   | ●●●●●<br>●       | ●●●○○<br>○    | ●●●○○<br>○       | ●●●○○<br>○      | Sheen Technology releases optimal thermal adhesive application guide for screw-less AI edge sensors and EV batteries. |

●●●●● High ●●●○○ Med-High ●●○○○ Med ●○○○○ Low | Yellow highlight = featured article



## Three Questions That Demand Your Decision This Week

### ❶ Is your advanced packaging strategy robust for AI/HPC?

The 'golden age' of advanced packaging, driven by AI/HPC, demands unprecedented material performance and rapid validation. With TSMC's \$265B US investment and consortia like US-JOINT cutting validation cycles by 83%, US/EU companies must assess if their current R&D; and supply chain strategies can meet this accelerated pace and scale.

### ❷ Are your high-temperature adhesives ready for SiC/EVs?

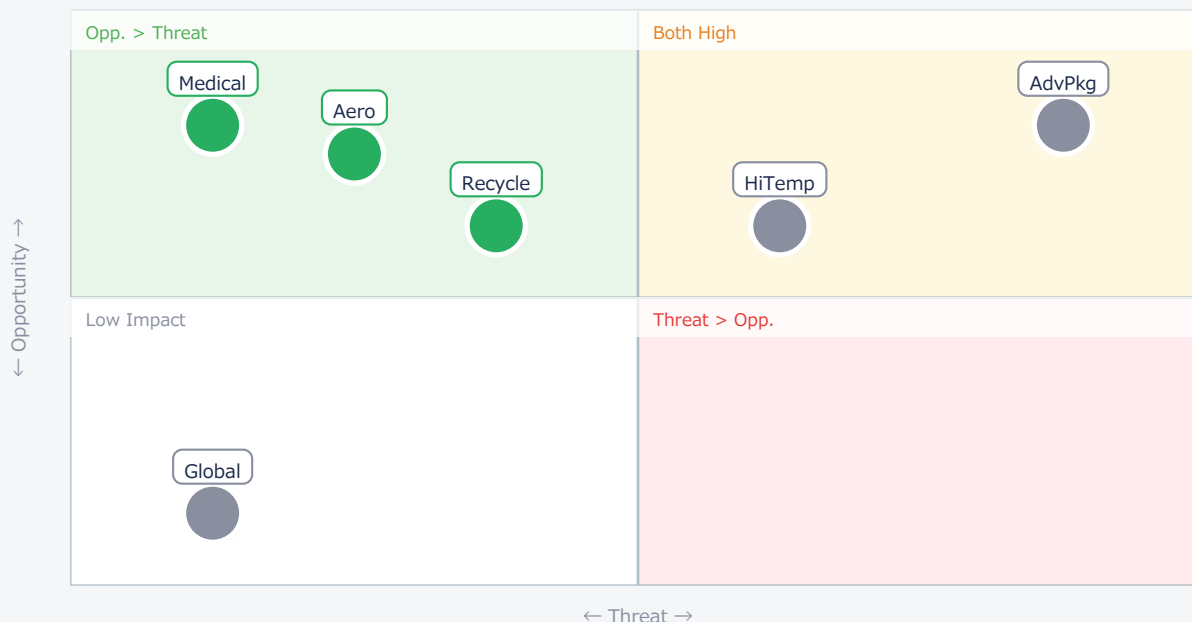
The shift to SiC power modules and high-density EV batteries requires adhesives and encapsulants capable of withstanding extreme temperatures (e.g., 230°C epoxy). As Bosch invests \$2B in US SiC fabs, US/EU materials suppliers must urgently evaluate if their current portfolio meets these new thermal demands or risk losing market share to innovative rivals.

### ❸ How will you secure medical device adhesive IP and QC?

The medical device market is seeing consolidation (H.B. Fuller acquiring AMS) and innovation in biocompatible, dual-cure, and fluorescent-dye adhesives for enhanced QC. US/EU medical device OEMs and adhesive suppliers must review their IP portfolios and quality control processes to ensure compliance, innovation, and competitive advantage in this critical sector.

## Opportunities vs. Threats for US/European Companies

Opportunity vs. Threat Matrix for US/European Companies



| Item      | Quadrant | ↑ Opportunity            | ↓ Threat                |
|-----------|----------|--------------------------|-------------------------|
| ● AdvPkg  | Critical | US/EU supply chain       | Asian dominance         |
| ● HiTemp  | Critical | New materials, EV/AI     | Performance gap, rivals |
| ● Medical | Opp.     | Med device growth, QC    | Regulatory, niche       |
| ● Recycle | Opp.     | Sustainability, new tech | Slow adoption, cost     |

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|          |      |                          |                       |
|----------|------|--------------------------|-----------------------|
| ● Aero   | Opp. | Aerospace growth, supply | Capacity, competition |
| ● Global | Ref. | Market access            | Regional rivals       |

## Deep Dive ① — TSMC's \$265B US Investment in Advanced Semi

#11 | 2026/07/16 | NIST - National Institute of Standards and Technology | Tech Novelty●○○○ Proximity●●●●● Market Impact●●●●● Data Reliability●●●●○ US/EU Relevance●●●●●

TSMC has announced an additional \$100 billion investment, bringing its total US commitment to \$265 billion for 12 advanced semiconductor manufacturing and packaging facilities. This monumental investment, part of a US-Taiwan agreement, aims to significantly strengthen domestic manufacturing, create tens of thousands of jobs, and advance US technological leadership in cutting-edge logic chips (3nm, 2nm) and advanced packaging solutions like HBM and 2.5D/3D stacking.

This move aligns with the US CHIPS Act, addressing geopolitical risks and supply chain vulnerabilities, and responding to the explosive demand for AI and HPC. It positions the US as a premier hub for advanced semiconductor production, crucial for future AI and HPC innovations.

### ► Strategic Analyst's Perspective

Strategic Analyst's Perspective: The published numbers are realistic, reflecting a long-term commitment driven by geopolitical strategy and market demand. Technical barriers remain in scaling advanced packaging processes and ensuring a skilled workforce. [Opportunity] for US/EU materials & equipment suppliers to integrate into this massive domestic supply chain, securing long-term contracts for advanced adhesives, underfills, and thermal interface materials. [Threat] for US/EU OEMs if they fail to leverage this domestic capacity, potentially relying on less secure or less advanced offshore options. Next actions: [Procurement] Immediately identify and engage with TSMC's US supply chain partners. [Strategy] Develop long-term material supply agreements for advanced packaging. [Executive] Advocate for continued government support for domestic manufacturing incentives.

## Deep Dive ② — AI Fuels 'Golden Age' of Advanced Packaging

#13 | 2026/07/17 | TechNews | Tech Novelty●●○○○ Proximity●●●●● Market Impact●●●●● Data Reliability●●●○○ US/EU Relevance●●●●●

2026 marks the 'golden age' of advanced packaging, driven by explosive AI demand. Amkor secured a 10-year CoWoS packaging and test agreement with TSMC in the US, bolstering the domestic supply chain. Concurrently, ASE, the world's largest OSAT, plans to build six new global facilities, underscoring the industry's urgent need to augment advanced packaging capacity.

CoWoS (Chip-on-Wafer-on-Substrate) is critical 2.5D/3D technology for AI/HPC chips, integrating multiple chiplets (CPU, GPU, HBM) onto a silicon interposer for faster communication and improved power efficiency. These investments aim to mitigate geopolitical risks and enhance domestic capabilities, as advanced packaging becomes a key enabler for continuous chip performance improvement beyond Moore's Law.

#### ► Strategic Analyst's Perspective

Strategic Analyst's Perspective: The 'golden age' narrative is realistic, supported by concrete investments and deals. Technical barriers include yield management for complex 2.5D/3D structures and developing new materials for thermal management and stress mitigation. [Opportunity] for US/EU materials suppliers (adhesives, encapsulants, TIMs) and equipment manufacturers to innovate and supply these advanced packaging lines. [Threat] for US/EU companies if they cannot keep pace with the rapid innovation and capacity expansion, potentially ceding leadership in critical AI component manufacturing. Next actions: [R&D;] Accelerate development of ultra-low CTE underfills, high-performance die attach films, and advanced thermal interface materials. [Business Dev] Form strategic partnerships with OSATs and foundries. [Strategy] Monitor competitor investments in advanced packaging capabilities.

## Deep Dive ③ — 230°C High-Heat Epoxy for SiC Power Modules

#17 | 2026/07/14 | creating nano technologies inc. | Tech Novelty●●●●○ Proximity●●●●○ Market Impact●●●●○ Data Reliability●●●●○ US/EU Relevance●●●●○

Creating Nano Technologies Inc. has introduced the EME-G785 series, a new epoxy encapsulation material with a record-high glass transition temperature (T<sub>g</sub>) of 230°C for epoxy encapsulants. This material is specifically engineered for SiC power modules, maintaining superior physical properties under extreme operating conditions and expanding their application fields.

The EME-G785 series is compatible with high-temperature soldering processes (above 200°C) used for connecting SiC chips to heat sinks or sintered materials. This breakthrough enables higher power density, miniaturization, and enhanced reliability for SiC power modules in EVs, industrial motor drives, and renewable energy systems, addressing the critical challenge of packaging materials for high-junction-temperature SiC devices.

### ► Strategic Analyst's Perspective

Strategic Analyst's Perspective: The 230°C T<sub>g</sub> is a significant, realistic achievement for epoxy encapsulants, directly addressing a critical bottleneck for SiC power modules. Technical barriers include long-term reliability under thermal cycling at such high temperatures and ensuring manufacturability at scale. [Opportunity] for US/EU materials suppliers to develop complementary high-temperature adhesives, die attach materials, and thermal interface materials that can operate reliably with this new class of encapsulants. [Threat] for US/EU SiC module manufacturers if they cannot access or develop similar high-performance encapsulation materials, limiting their ability to fully leverage SiC's potential. Next actions: [R&D;] Benchmark EME-G785 and initiate internal projects for next-gen high-T<sub>g</sub> encapsulants and compatible adhesives. [Procurement] Evaluate potential suppliers for these advanced materials. [Strategy] Assess competitive landscape for high-temperature power electronics packaging.

## Other Notable Articles

Hoenle Adhesives Unveils "Structalit 8205" Underfill for Advanced Flip-Chip and BGA Packages (Engineer Live)

Tech Novelty●●●●○ Proximity●●●●○ Market Impact●●●●○

New underfill withstands 1,000 thermal cycles (-40°C to +100°C), crucial for automotive/aerospace reliability.

Syensqo Breaks Ground on Multi-Million Dollar U.S. Manufacturing Expansion in Maryland (Syensqo)

Tech Novelty●●●●○ Proximity●●●●● Market Impact●●●●○

EU firm boosts US aerospace adhesives production by >30%, enhancing supply reliability for critical materials.

Bosch Secures \$225M in U.S. Commerce Department Funding for \$2 Billion SiC Semiconductor Fab Conversion (Bosch)

Tech Novelty●●●●○ Proximity●●●●○ Market Impact●●●●●

German giant's US SiC fab will boost domestic production, driving demand for high-temp adhesives in EVs/industrial.

Aduro and ECOCE Launch HCT Testing in Mexico for Flexible Plastic Packaging Waste (Aduro Clean Technologies)

Tech Novelty●●●●○ Proximity●●●●○ Market Impact●●●●●

Novel chemical recycling for multi-layer plastics with adhesives offers a path to circular economy for difficult waste.

Graphite Proves Essential for NEV Battery Thermal Management, Cutting Peak Temperatures by up to 35% (Sheen Technology)

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Tech Novelty●●●○○ Proximity●●●●○ Market Impact●●●●○

Graphene thermal pads reduce EV battery peak temps by 35%, critical for safety and longevity; impacts TIM demand.

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## Recommended Actions This Week

Action recommendations based on article evaluation matrix and opportunity/threat analysis.

### ■ Immediate (this week)

- [Executive] Review strategic implications of TSMC's \$265B US investment and advanced packaging 'golden age' on long-term market position.
- [R&D;] Benchmark competitor high-temperature encapsulants (e.g., 230°C epoxy) and assess current portfolio gaps for SiC/EV applications.
- [Procurement] Identify key US-based advanced packaging material suppliers and initiate discussions for future supply chain integration.

### ■ Short-term (1 month)

- [R&D;] Evaluate new biocompatible and QC-enhancing medical adhesives (e.g., dual-cure, fluorescent dye) for integration into next-gen medical devices.
- [Business Dev] Engage with advanced packaging consortia (e.g., US-JOINT) to accelerate R&D; cycles and gain early access to new material requirements.
- [Strategy] Conduct a competitive analysis of Asian rivals' advancements in high-performance thermal interface materials for EV batteries.

### ■ Medium-long term (quarter+)

- [R&D;] Launch internal projects to develop next-generation high-temperature adhesives and encapsulants capable of 250°C+ for future power electronics.
- [Strategy] Explore partnerships or investments in chemical recycling technologies for multi-layer plastics to align with circular economy goals.
- [Legal/IP] Conduct a comprehensive IP landscape analysis in advanced packaging adhesives and high-temperature materials to identify opportunities and risks.

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# **Adhesives\_Sealants — Selected Articles**

Date: 2026-07-19

Articles: 19



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- #03 Micron Commits Up to \$3 Billion to Fortify U.S. Semiconductor Ecosystem, Including \$500M Strategic Investment in GlobalWafers for 300mm Silicon Production
- #04 Resonac-Led US-JOINT Consortium of 12 Companies Launches in Silicon Valley to Cut Advanced Packaging Validation Cycles by 83%
- #05 H.B. Fuller Acquires UK-Based Advanced Medical Solutions for Strategic Expansion in Medical Adhesives, Targeting \$55M Synergy by 2031
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- #14 AI and EVs Drive 2026 Semiconductor Market, High-Bandwidth Memory (HBM) and Advanced Manufacturing Nodes Emerge as Key Growth Themes
- #15 BYK Acquires Radar Dome Measurement System Company, Bolstering Presence in Autonomous Driving Market and Anticipating Related Adhesive and Sealant Demand
- #16 Graphite Proves Essential for NEV Battery Thermal Management, Cutting Peak Temperatures by up to 35%; Sheen Technology Offers Lightweight Graphene Thermal Pads

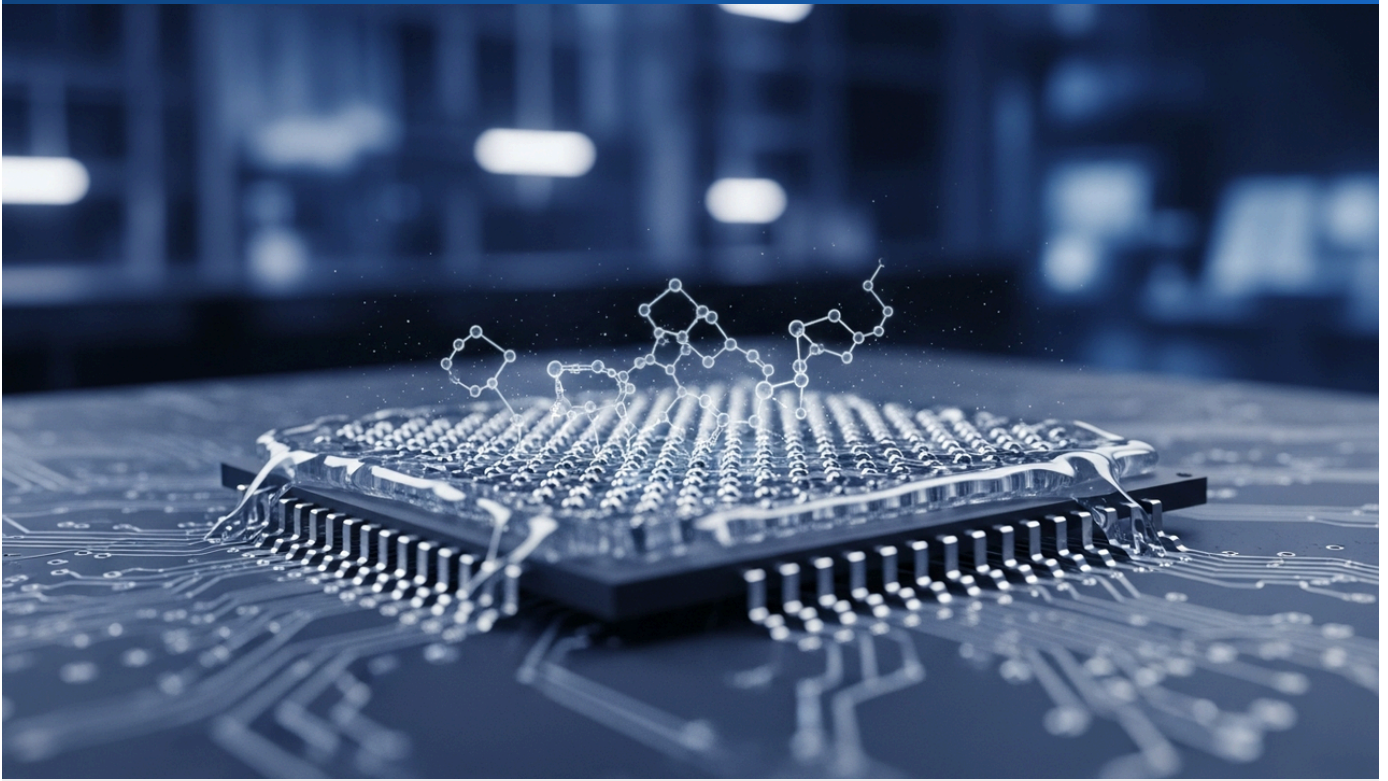
#17 New 230°C High-Heat-Resistant Epoxy Encapsulation Material (EME-G785 Series) Boosts SiC Power Module Applications and Thermal Performance

#18 SEMI Advanced Packaging Summit 2026 Highlights HBM and 2.xD Packaging as Key Innovators for AI/HPC Performance and Power Efficiency

#19 Sheen Technology Releases Optimal Thermal Adhesive Application Guide for Screw-Less AI Edge Sensors and EV Battery Designs

# #01 Hoenle Adhesives Unveils "Structalit 8205" Underfill for Advanced Flip-Chip and BGA Packages, Withstanding 1,000 Thermal Cycles (-40°C to +100°C)

Published July 10, 2026   Engineer Live   UK



## OVERVIEW

Hoenle Adhesives has launched "Structalit 8205", a next-generation underfill material engineered for advanced electronics packaging, demonstrating exceptional thermal cycling resistance. The material successfully endured 1,000 thermal cycles from -40°C to +100°C, proving its superior mechanical stability and thermal performance. This innovation significantly enhances the long-term reliability of flip-chip and BGA devices, making them suitable for harsh environments in automotive, aerospace, and industrial systems.

### Key Findings

Hoenle Adhesives has introduced "Structalit 8205," a next-generation underfill material specifically designed to address the challenges of advanced electronics packaging technologies like flip-chip (FC) and ball grid array (BGA). This new material has demonstrated outstanding thermal performance and mechanical stability by successfully passing 1,000 rigorous thermal cycles from -40°C to +100°C. This breakthrough guarantees long-term reliability in harsh environments, significantly enhancing the robustness of semiconductor devices in critical applications such as automotive, aerospace, and industrial systems, where extreme reliability is paramount.

### Technical Details

Structalit 8205 was developed based on a unique epoxy formulation combined with optimized filler technology. This proprietary composition effectively reduces the coefficient of thermal expansion (CTE) while achieving a high glass transition temperature (Tg) and a balanced modulus of elasticity. These properties are crucial for mitigating thermal stress between the chip and substrate, thereby minimizing the risk of microcracks and delamination. Especially in fine-pitch interconnects common in flip-chip and BGA packages, where thermal cycling stress is a primary cause of device failure, the high performance of Structalit 8205 offers a definitive solution to these challenges.

- **Thermal Cycling Resistance:** Cleared 1,000 cycles from -40°C to +100°C.
- **Reduced CTE:** Minimizes thermal stress mismatch between chip and substrate.
- **High Tg & Balanced Modulus:** Achieves dimensional stability and flexibility at elevated temperatures.

## Background & Context

Today's high-performance electronics, particularly semiconductor devices used in AI accelerators, 5G communication, and autonomous vehicles, demand higher integration, faster operation speeds, and increased power density. Consequently, the thermal and mechanical loads on chip packages are escalating, rendering conventional encapsulants and underfill materials inadequate. Underfills play a vital role in flip-chip packages by filling the gap between the chip and substrate, distributing stress on solder bumps, and thereby enhancing device reliability. The emergence of advanced materials like Structalit 8205 represents a critical step in meeting these evolving market demands and enabling the realization of next-generation electronic products.

## Strategic Significance & Outlook

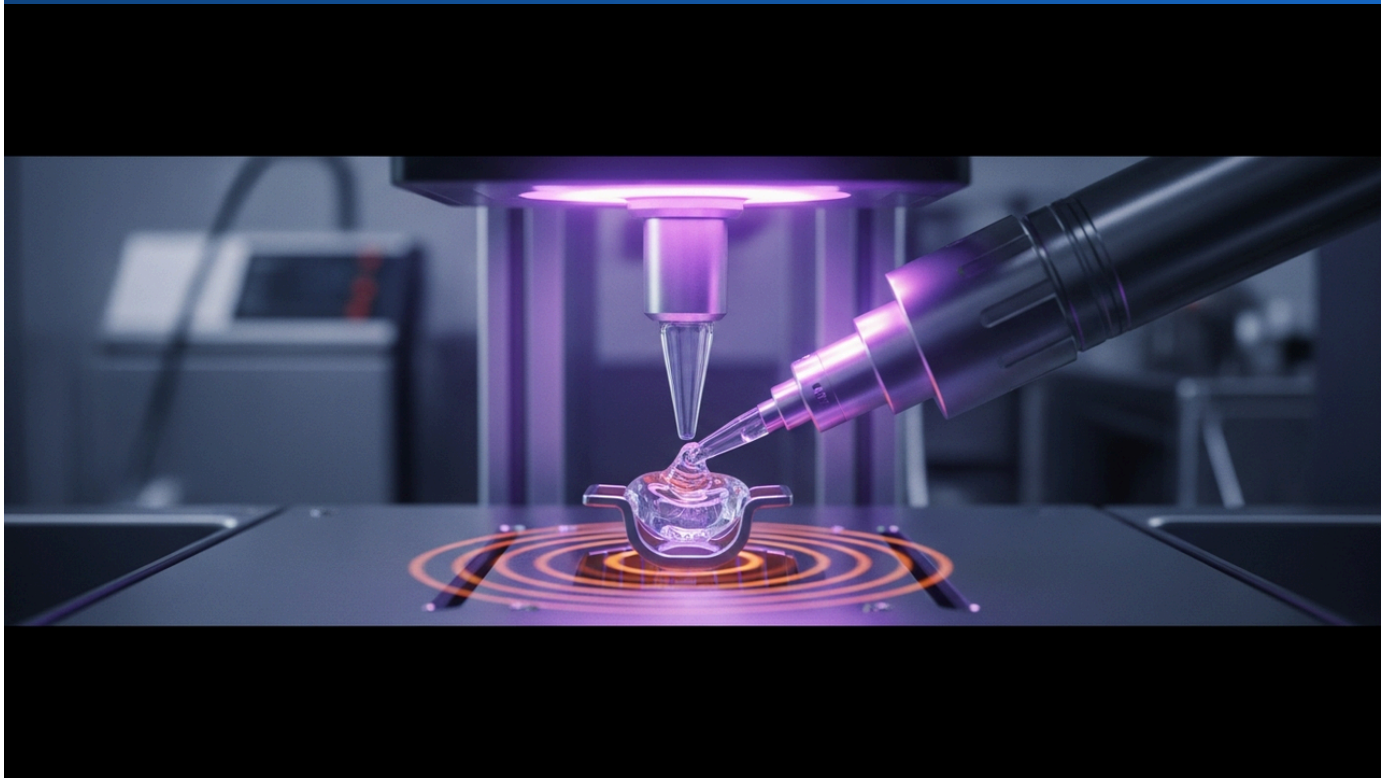
The market introduction of Structalit 8205 is a significant milestone for Hoenle Adhesives in establishing its leadership in advanced packaging materials. This material is anticipated to be adopted by the automotive and aerospace industries, which have stringent quality standards, contributing to the improved reliability of electronic components in these sectors. Looking ahead, further material development for even more extreme environments and application to finer packaging structures will likely accelerate technological innovation across the electronics industry. As the demand for high-performance semiconductors continues to expand, robust adhesive and encapsulating materials such as Structalit 8205 will be indispensable for stabilizing supply chains and enhancing product competitiveness.

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Source: <https://engineerlive.com/hoenle-adhesives-launches-new-underfill-material-advanced-electronics/>

# #02 Master Bond Launches ISO 10993-5 Biocompatible Dual-Cure Adhesive UV26DCMed, Ideal for Reusable Medical Devices

Published July 09, 2026   Adhesives & Sealants Industry   USA



## OVERVIEW

Master Bond has introduced UV26DCMed, a single-component dual-cure adhesive system for medical device manufacturing, achieving ISO 10993-5 biocompatibility. This innovative material combines rapid UV light curing for initial fixturing with subsequent heat curing for complete polymerization in shadowed areas. It offers exceptional resistance to repeated sterilization methods like autoclaving and ethylene oxide, making it ideal for durable, reusable medical devices requiring high reliability.



### Key Findings: Master Bond Achieves ISO 10993-5 Biocompatibility with Dual-Cure Adhesive UV26DCMed for Medical Devices

Master Bond has unveiled UV26DCMed, a groundbreaking single-component dual-cure adhesive system designed to meet the rigorous demands of advanced medical device manufacturing. This innovative product combines rapid initial curing via UV light with subsequent thermal curing, ensuring complete polymerization even in shadowed areas or where light penetration is limited. A critical achievement is its compliance with ISO 10993-5 cytotoxicity testing, a primary requirement for medical device biocompatibility.

#### Technical & Clinical Details

- **Dual-Cure Mechanism:** UV26DCMed first undergoes rapid surface curing upon exposure to UV light (320-365nm for seconds), allowing for quick component positioning and tacking. Full and robust curing is then achieved through heat exposure (80°C to 125°C), which is essential for ensuring superior strength and durability in complex geometries or with opaque substrates common in medical devices.
- **Biocompatibility and Sterilization Resistance:** The adhesive meets ISO 10993-5 biological evaluation requirements, confirming its safety for medical applications. Furthermore, it demonstrates excellent resistance to common sterilization methods for reusable devices, including steam autoclaving, ethylene oxide (EtO), and glutaraldehyde. This resistance is crucial for maintaining device integrity and performance through multiple sterilization cycles, contributing to extended product lifespan and cost-effectiveness.
- **Superior Adhesion and Properties:** UV26DCMed provides high bond strength to a variety of medical-grade substrates, such as polycarbonates, stainless steel, glass, and ceramics. It also features low shrinkage, high dimensional stability, and excellent chemical resistance, making it suitable for a wide range of demanding medical device applications.

## Background & Industry Context

The medical device industry is characterized by continuous advancements in device complexity and miniaturization, alongside increasingly stringent safety and reliability requirements for both disposable and reusable instruments. For devices that may contact the human body, such as surgical tools, diagnostic equipment, catheters, and dialysis machines, the biocompatibility of materials and their ability to withstand repeated sterilization processes are paramount. Traditional adhesives often struggle to meet this confluence of high-performance and regulatory demands.

## Strategic Significance & Outlook

The introduction of innovative dual-cure adhesives like UV26DCMed provides medical device manufacturers with greater design flexibility and enhanced manufacturing process efficiency. This innovation can accelerate product development cycles and time-to-market. By ensuring higher reliability and safety in medical devices, it also contributes to improved patient outcomes and optimized healthcare costs. Master Bond's consistent focus on advanced materials for the medical sector reinforces its position as a leading provider of specialized adhesive solutions in this critical industry.

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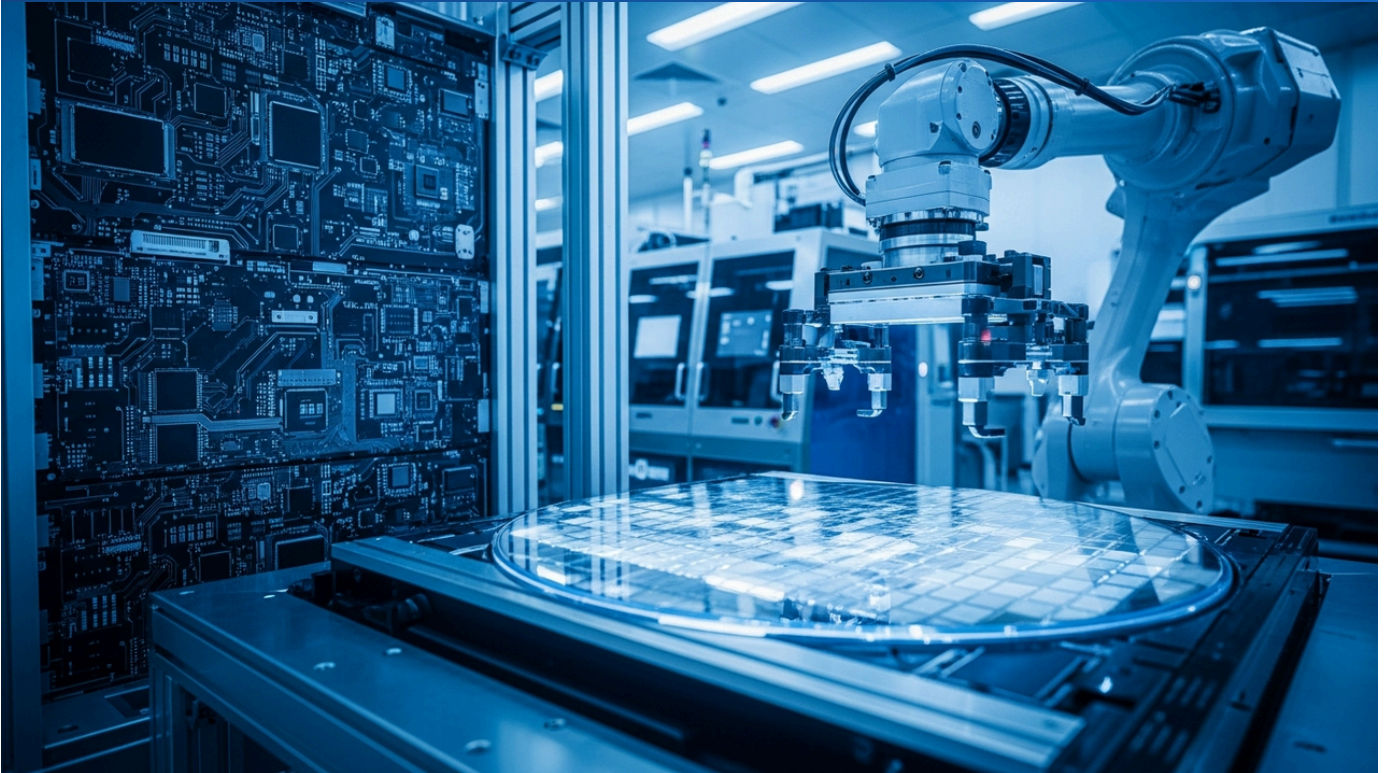
Source: <https://www.adhesivesmag.com/articles/102521-dual-cure-adhesive-meets-demands-of-advanced-medical-device-manufacturing>

Collected: July 17, 2026 | Automated Research System (Gemini API)



# #03 Micron Commits Up to \$3 Billion to Fortify U.S. Semiconductor Ecosystem, Including \$500M Strategic Investment in GlobalWafers for 300mm Silicon Production

Published July 09, 2026   Micron Technology   USA



## OVERVIEW

Micron Technology announced a strategic investment plan of up to \$3 billion to bolster the U.S. semiconductor supply chain ecosystem. This includes a \$500 million strategic funding to GlobalWafers Co., Ltd., aimed at developing and enhancing 300mm prime silicon wafer manufacturing capabilities at GlobalWafers America. Micron also secured a 10-year supply agreement with GlobalWafers, ensuring critical silicon wafer capacity to support its long-term manufacturing initiatives and fortify domestic resilience.

### Key Findings: Micron Invests Up to \$3 Billion in U.S. Semiconductor Supply Chain, Boosting GlobalWafers' 300mm Silicon Wafer Production

Micron Technology has unveiled a strategic investment plan totaling up to \$3 billion, aimed at strengthening the U.S. semiconductor supply chain ecosystem. Central to this ambitious initiative is a \$500 million strategic funding injection into GlobalWafers Co., Ltd. This capital will support the development and enhance the manufacturing capabilities of GlobalWafers America's 300mm prime silicon wafer fabrication facility in Texas, thereby increasing domestic self-sufficiency for crucial semiconductor materials.

#### Technical & Business Details

- **Investment Allocation:** The overall \$3 billion investment by Micron is strategically allocated to fortify various aspects of the domestic semiconductor ecosystem. The \$500 million directed to GlobalWafers specifically targets the production capacity of 300mm silicon wafers, which are foundational to advanced semiconductor manufacturing and critical for addressing potential supply chain bottlenecks.
- **Long-Term Supply Agreement:** In parallel with the investment, Micron has entered into a 10-year long-term supply agreement with GlobalWafers. This ensures a stable and guaranteed supply of silicon wafers for the next decade, providing robust support for Micron's long-term manufacturing plans and growth strategies, particularly for its future DRAM and NAND flash memory production.
- **Enhancing Semiconductor Resilience:** This investment aligns with the objectives of the U.S. CHIPS and Science Act, aiming to restore and strengthen domestic semiconductor manufacturing capabilities. This move is crucial for enhancing resilience against geopolitical risks and supply chain disruptions, especially given the surging demand for AI and High-Performance Computing (HPC), which necessitate a highly reliable domestic supply chain.

## Background & Industry Context

The global semiconductor industry has faced significant challenges in recent years, including supply chain disruptions and escalating geopolitical tensions, underscoring the urgent need for robust domestic manufacturing capabilities. The U.S. is aggressively pursuing the reshoring of semiconductor production, driven by considerations of AI leadership, national security, and maintaining economic competitiveness. Silicon wafers, as the fundamental substrate for semiconductor devices, are critical to the healthy development and stability of the entire industry.

## Strategic Significance & Outlook

Micron's strategic investment is poised to significantly enhance the overall resilience of the U.S. semiconductor supply chain and secure long-term technological leadership. This is part of Micron's broader commitment to invest over \$250 billion in its U.S. operations by 2035, accelerating advanced semiconductor manufacturing domestically and expected to create tens of thousands of high-value jobs. This move is a vital component of the larger global trend to rebalance cooperation and regional self-sufficiency within the semiconductor industry, bolstering a foundational industry for future innovation and economic security.

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Source: <https://investors.micron.com/news-releases/news-release-details/micron-announces-3-billion-strategic-investment-strengthen-us>

Collected: July 17, 2026 | Automated Research System (Gemini API)



# #04 Resonac-Led US-JOINT Consortium of 12 Companies Launches in Silicon Valley to Cut Advanced Packaging Validation Cycles by 83%

Published July 16, 2026   Resonac   Japan



## OVERVIEW

A consortium of 12 companies, US-JOINT, led by Japan's Resonac Corporation, has officially launched in Silicon Valley to accelerate the concept validation of next-generation semiconductor packaging, primarily targeting data center applications. This initiative aims to reduce the validation cycle from approximately six months to just one month by integrating materials evaluation, prototyping, and testing capabilities. The aggressive shortening of development timelines is critical for rapidly evolving AI/HPC demands and strengthens the global semiconductor ecosystem.

### Key Findings: Resonac-Led US-JOINT Consortium Initiates Silicon Valley Operations, Slashing Advanced Packaging Validation Time by 83%

Resonac Corporation, a leading Japanese chemical materials manufacturer, is spearheading the 'US-JOINT' international consortium, which has officially opened its collaborative hub in Silicon Valley. This strategic move is designed to drastically accelerate the concept validation process for next-generation semiconductor packaging, primarily focusing on applications in data centers. By geographically centralizing and integrating materials evaluation, prototyping, and testing functions, US-JOINT aims to reduce the typical validation cycle from approximately six months to just one month.

#### Technical & Business Details

- **International Collaborative Model:** US-JOINT is an open innovation platform comprising 12 key players, including leading semiconductor material manufacturers, equipment suppliers, and design houses from Japan, the U.S., and Europe. This diverse convergence of expertise enables the development of comprehensive solutions that would be challenging for any single company to achieve independently.
- **Focus on Next-Generation Packaging:** The consortium is concentrating on advanced packaging technologies such as 2.5D/3D packaging and heterogeneous integration, which are indispensable for high-performance AI/HPC chips. These technologies are crucial for achieving faster inter-chip connections, improving power efficiency, and enabling miniaturization, thereby significantly boosting data center performance.
- **Streamlined Validation Process:** The centralized facility in Silicon Valley allows member companies to jointly conduct material characterization, initial prototyping, and reliability testing in a seamless workflow. This integrated approach shortens iterative development cycles, significantly reducing the time-to-market for advanced semiconductor products.

## Background & Industry Context

With the explosive growth of Artificial Intelligence (AI) and High-Performance Computing (HPC), traditional semiconductor scaling (Moore's Law) is reaching its physical limits. Consequently, 'advanced packaging,' which effectively integrates multiple chips, has emerged as a new growth engine for the semiconductor industry. However, developing advanced packaging solutions is complex, involving intricate interactions across materials, processes, equipment, and design, often leading to prolonged development timelines. US-JOINT is a critical initiative to address this bottleneck.

## Strategic Significance & Outlook

The activities of US-JOINT are expected to significantly expedite the commercialization of advanced packaging technologies, thereby accelerating innovation in the AI/HPC sectors. The dramatic reduction in validation cycles will enable faster evaluation of new materials and processes, supporting member companies and the U.S. in gaining a competitive edge in next-generation semiconductor development. This Japanese-led international collaboration is poised to strengthen global semiconductor supply chain linkages and substantially contribute to technological advancement and competitiveness across the industry.

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Source: <https://en.igascn.com/global/detail/?TypeId=2584&Id=14136&SortSource=list>

Collected: July 17, 2026 | Automated Research System (Gemini API)



# #05 H.B. Fuller Acquires UK-Based Advanced Medical Solutions for Strategic Expansion in Medical Adhesives, Targeting \$55M Synergy by 2031

Published July 16, 2026   Stocktwits   USA



## OVERVIEW

H.B. Fuller has announced a cash acquisition of UK-based Advanced Medical Solutions Group Plc, strategically expanding its medical adhesives segment. This acquisition is projected to generate approximately \$55 million in synergies by 2031. The deal is set to broaden H.B. Fuller's market reach into tissue adhesives, tapes, dressings, and formulated biosurgical products, increasing its addressable market from \$80 billion to \$95 billion.

### Key Findings: H.B. Fuller Expands Medical Adhesives Market with Advanced Medical Solutions Acquisition, Projecting \$55M Synergy by 2031

H.B. Fuller has announced an agreement to acquire Advanced Medical Solutions Group Plc (AMS), a UK-based company, in an all-cash transaction. This strategic acquisition is set to significantly bolster H.B. Fuller's position in the medical adhesives market. The company projects the deal will generate approximately \$55 million in synergies by 2031. Furthermore, this transaction is expected to expand H.B. Fuller's addressable market by \$15 billion, from an existing \$80 billion to \$95 billion.

#### Technical & Business Details

- **AMS Product Portfolio:** Advanced Medical Solutions specializes in a range of products including tissue adhesives, medical tapes, wound dressings, and advanced formulated biosurgical products. These offerings are utilized in diverse medical applications such as surgical tissue bonding, wound closure, and skin protection.
- **H.B. Fuller's Strategic Expansion:** The acquisition allows H.B. Fuller to diversify its medical adhesives segment, entering specialized, high-growth areas. This broadens the scope of solutions it can offer, providing a more comprehensive product lineup to medical device manufacturers and healthcare providers globally.
- **Synergy Generation:** The projected \$55 million in synergies is anticipated to materialize through the integration of AMS's innovative products with H.B. Fuller's extensive global sales network and robust R&D capabilities. Specific areas for synergy include increased cross-selling opportunities, supply chain optimization, and enhanced research and development efficiencies.

#### Background & Industry Context

The global medical device market continues its strong growth trajectory, driven by an aging population, advancements in medical technology, and the increasing adoption of minimally invasive surgical procedures. The demand for high-performance, biocompatible adhesives and sealants is surging due to their critical role in improving surgical efficiency, accelerating patient recovery, and reducing infection risks. Against this backdrop, the specialty chemicals industry is witnessing active M&A activities aimed at securing access to high-growth segments.



## Strategic Significance & Outlook

This acquisition is poised to substantially strengthen H.B. Fuller's competitive edge in the medical adhesives sector, solidifying its position as a global leader. By integrating AMS's specialized expertise and product offerings, H.B. Fuller can accelerate the development of next-generation surgical and wound care products, responding more swiftly to evolving market needs. This strategic move is expected to enhance the company's profitability and market share while contributing significantly to advancements in medical technology worldwide.

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Source: <https://stocktwits.com/news-articles/markets/equity/ful-to-buy-ams-cash-deal-uk-tam-q2-earnings/cZ1Gh2sR7QH>

Collected: July 17, 2026 | Automated Research System (Gemini API)

## #06 Syensqo Breaks Ground on Multi-Million Dollar U.S. Manufacturing Expansion in Maryland, Boosting Aerospace Adhesives Production by Over 30%

Published July 13, 2026 Syensqo ベルギー



### OVERVIEW

Syensqo has commenced a multi-million dollar manufacturing expansion at its Havre de Grace, Maryland facility, projected to increase production capacity by over 30%. This strategic investment will significantly bolster the supply of critical advanced materials, including structural adhesives and surface treatments, for the rapidly growing aerospace market. The initiative aims to enhance supply reliability and operational efficiency to meet escalating industry demands.

### Background

The global aerospace industry is experiencing robust growth, fueled by a resurgence in commercial aviation demand and increased defense sector investments. This expansion is paralleled by a rapid shift towards lightweight composite materials and advanced structural designs, crucial for enhancing fuel efficiency and reducing carbon emissions. Consequently, there's a burgeoning demand for high-performance adhesives and complementary materials essential for effectively bonding composite structures and ensuring their long-term integrity. Amid evolving geopolitical landscapes, strengthening supply chain resilience for critical aerospace components remains a paramount industry priority.

### Key Findings

Syensqo, a global leader in advanced material solutions, has officially broken ground on a multi-million dollar manufacturing capacity expansion at its Havre de Grace facility in Maryland, U.S. This strategic investment is projected to increase the plant's production capacity by over 30%, significantly bolstering the supply reliability of critical advanced solutions for the aerospace industry.

The expansion is meticulously engineered to address the stringent performance requirements of the aerospace sector. This includes high-performance structural adhesives, indispensable for aircraft lightweighting and enhanced durability; diverse adhesive formulations optimized for composite material bonding; advanced surface treatment products designed to prepare substrates for optimal painting or bonding; and specialized primers to significantly improve adhesive strength and longevity.

The projected increase in production capacity by more than 30% underscores Syensqo's commitment to agilely and dependably meet the escalating demands of the expanding aerospace market. This ensures a stable and predictable supply of crucial materials for customers, empowering them to execute complex manufacturing schedules with greater certainty. Designed with forward-looking principles, the new production lines will incorporate state-of-the-art manufacturing technologies and advanced automation. This integration is set to enhance operational efficiency while simultaneously embedding sustainability objectives, such as optimized energy consumption and waste minimization, into both design and process execution.

This expansion represents a pivotal strategic investment for Syensqo, solidifying its position as a preeminent global provider of advanced materials for aerospace applications. By enhancing its manufacturing capabilities, the company will be better poised to flexibly respond to evolving customer needs and continue delivering cutting-edge material solutions that underpin the development of next-generation aircraft. Syensqo's commitment clearly reflects its dedication to technological innovation and its contribution to a more sustainable future within the aerospace sector.

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Source: <https://www.chemanalyst.com/NewsAndDeals/NewsDetails/syensqo-launches-manufacturing-expansion-at-havre-de-grace-43298>

Collected: July 17, 2026 | Automated Research System (Gemini API)



# #07 Master Bond Strengthens Broad USP Class VI Compliant Adhesive Line for Disposable and Reusable Medical Devices, Ensuring Extensive Sterilization Resistance

Published July 10, 2026   Master Bond   USA



## OVERVIEW

Master Bond now offers an enhanced, comprehensive line of high-performance adhesives for disposable and reusable medical device assembly, fully compliant with USP Class VI requirements. This diverse range includes epoxies, silicones, polyurethanes, cyanoacrylates, and UV curable systems, delivering excellent bond strength and gap-filling capabilities for both similar and dissimilar substrates. Engineered to withstand multiple sterilization methods such as autoclaving, ethylene oxide, and radiation, these adhesives ensure the safety and long-term durability of critical medical equipment.

### **Key Findings: Master Bond Reinforces Comprehensive USP Class VI Compliant Adhesive Line for Medical Devices, Offering Broad Sterilization Resistance and Biocompatibility**

Master Bond has strengthened its extensive line of high-performance adhesives, fully compliant with USP Class VI requirements, to meet the evolving demands of both disposable and reusable medical device assembly. This comprehensive portfolio includes solutions based on diverse chemistries such as epoxies, silicones, polyurethanes, cyanoacrylates, and UV curable systems, providing exceptional bond strength and gap-filling capabilities for both similar and dissimilar substrates.

#### **Technical & Clinical Details**

- **Diverse Adhesive Chemistries:** The product line encompasses a wide array of options, including high-strength epoxies, flexible silicones, impact-resistant polyurethanes, fast-curing cyanoacrylates, and precisely controllable UV curable systems. This versatility enables medical device designers to select the optimal material based on specific application requirements, such as flexibility, rigidity, or optical clarity.
- **USP Class VI Compliance & Sterilization Resistance:** All products within this enhanced line meet USP Class VI biological evaluation criteria, ensuring assured biocompatibility. Furthermore, these adhesives are specifically engineered to endure the stringent sterilization processes commonly applied to medical devices, including steam autoclaving, ethylene oxide (EtO), radiation (gamma and E-beam), and cold chemical sterilants. This robust resistance is critical for guaranteeing the long-term reliability of reusable devices throughout their lifecycle.
- **Application Versatility:** These adhesives are widely utilized in the manufacturing of a broad spectrum of medical devices, including catheters, syringes, diagnostic equipment, surgical instruments, respiratory devices, and dialysis machines. Their roles vary from precise component bonding and fluid path sealing to the protection of sensitive electronic components.

## Background & Industry Context

The medical device industry operates under some of the most stringent regulations concerning safety, reliability, and product longevity. Product developers are continuously seeking new materials that can adapt to evolving clinical needs and increasingly rigorous sterilization protocols. Particularly, with growing emphasis on reusable medical devices for environmental and cost-saving reasons, there is an increasing demand for high-performance adhesives capable of withstanding multiple sterilization cycles. Master Bond's initiative directly addresses these critical market expectations.

## Strategic Significance & Outlook

Master Bond's reinforced adhesive line provides medical device manufacturers with powerful tools to enhance design flexibility, streamline manufacturing processes, and significantly improve the quality and safety of their final products. This will accelerate the development of next-generation medical devices, contributing to improved patient care and strengthening the foundation of medical technology innovation. Master Bond continues to expand its role as a key material provider in this vital market segment, driving both technological advancement and public health benefits.

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Source: <https://www.masterbond.com/industries/adhesives-disposable-and-reusable-medical-devices>

Collected: July 17, 2026 | Automated Research System (Gemini API)



# #08 German Industrial Adhesives Giant Jowat Establishes South Korean Subsidiary to Boost Automotive, Electronics, and Packaging Market Presence

Published July 16, 2026   European Coatings   Germany



## OVERVIEW

German industrial adhesive manufacturer Jowat announced the establishment of its new subsidiary, Jowat Korea, in Seoul. This strategic expansion is driven by the increasing demand for industrial adhesives in South Korea and aims to advance the company's international growth strategy. Jowat sees significant potential for innovative bonding solutions particularly in the automotive, electronics, and packaging sectors, where it plans to strengthen its market presence.

### Key Findings: Jowat Establishes 'Jowat Korea' Subsidiary in Seoul, Bolstering Industrial Adhesive Operations in Asia

Jowat, a leading German manufacturer of industrial adhesives, has officially announced the establishment of its new subsidiary, 'Jowat Korea,' in Seoul, South Korea. This move represents a significant step in the company's international growth strategy within the Asia-Pacific region, specifically targeting the increasing demand for industrial adhesives in the dynamic South Korean market.

#### Technical & Business Details

- **Strategic Market Entry:** Jowat recognizes South Korea's global leadership in the automotive, electronics, and packaging industries, identifying substantial potential for innovative adhesive solutions in these sectors. The establishment of Jowat Korea will enable the company to provide faster local response, enhanced technical support, and closer collaboration with customers.
- **Product and Applications:** Jowat offers a broad portfolio of high-quality hot melt adhesives, reactive adhesives, and water-based adhesives. These products are utilized in diverse applications, including automotive component assembly (e.g., lightweighting, NVH solutions), precision bonding for electronics such as smartphones and displays, and the manufacturing of high-performance packaging materials.
- **Commitment to Internationalization:** This expansion into South Korea is a pivotal next step in Jowat's global deployment strategy, broadening its footprint in Asia. It further reinforces the company's capability to provide seamless service to its global clientele, adapting to regional specificities.

## Background & Industry Context

South Korea stands as one of the world's most technologically advanced nations, where continuous innovation is demanded, particularly within its manufacturing industries. With escalating environmental regulations and requirements for extended product lifecycles, adhesives are increasingly valued not just for bonding but for their high performance, sustainability, and smart functionalities. Global adhesive manufacturers are accelerating the establishment of local presences to offer tailored solutions for these sophisticated regional needs.

## Strategic Significance & Outlook

The establishment of Jowat Korea lays a strong foundation for Jowat's long-term growth in the South Korean market. Through enhanced local R&D and technical support, Jowat is expected to provide customized adhesive solutions tailored to the needs of Korea's key industries, thereby expanding its market share. This move will accelerate Jowat's business development across the broader Asia-Pacific region and represents a significant strategic milestone in strengthening its global competitiveness.

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Source: <https://www.european-coatings.com/news/markets-companies/jowat-expands-to-south-korea/>

Collected: July 17, 2026 | Automated Research System (Gemini API)



# #09 Bosch Secures \$225M in U.S. Commerce Department Funding for \$2 Billion SiC Semiconductor Fab Conversion in California, Boosting Domestic Production

Published July 13, 2026   Bosch   Germany



## OVERVIEW

Bosch has secured up to \$225 million in direct funding from the U.S. Department of Commerce, part of a broader \$2 billion investment to convert its Roseville, California facility into a silicon carbide (SiC) semiconductor production site. Commercial production of 200mm wafer-based SiC semiconductors is slated to begin in 2026, significantly enhancing supply chain resilience for U.S. automotive manufacturers and industrial energy applications. This strategic move establishes a critical domestic SiC manufacturing capability.

### Key Findings: Bosch Secures \$225M U.S. Funding for \$2 Billion SiC Semiconductor Fab in California, Bolstering Domestic Production

Bosch, a leading global supplier of technology and services, has signed a binding agreement to receive up to \$225 million in direct funding from the U.S. Department of Commerce. This funding will accelerate Bosch's ambitious \$2 billion investment plan to convert its existing facility in Roseville, California, into an innovative silicon carbide (SiC) semiconductor manufacturing site. Bosch anticipates commencing commercial production of 200mm wafer-based SiC semiconductors within 2026, which will significantly strengthen supply chain resilience for U.S. automotive manufacturers and industrial energy applications.

#### Technical & Business Details

- **Strategic Importance of SiC Semiconductors:** SiC semiconductors offer superior power efficiency, higher temperature resistance, and faster switching capabilities compared to traditional silicon-based semiconductors. This makes them ideal for applications requiring high power density and efficiency, such as electric vehicle (EV) powertrains, renewable energy inverters, and data center power supplies.
- **Roseville Facility Conversion:** The Bosch Roseville facility will incorporate state-of-the-art SiC semiconductor manufacturing technology to establish 200mm wafer production capabilities. This domestic production will ensure a stable supply for U.S. companies, reducing reliance on external supply chains and enhancing national security.
- **CHIPS Act Support:** This funding is provided under the U.S. CHIPS and Science Act, fully aligning with the U.S. government's goals to boost domestic semiconductor manufacturing capacity and improve national security and economic competitiveness.

## Background & Industry Context

The global semiconductor industry is seeing accelerated investment in regional manufacturing hubs due to escalating geopolitical tensions and past supply chain vulnerabilities. Driven by the explosive growth of the EV market, demand for SiC power semiconductors is expanding at an unprecedented rate, prompting governments worldwide to strategically secure domestic production capabilities in this critical sector. Bosch's move is a convergence of these global trends and U.S. industrial policy.

## Strategic Significance & Outlook

The commencement of SiC semiconductor production at the Roseville facility will be pivotal for Bosch to establish its position as a key player in the power semiconductor market and expand its share in the EV and industrial energy markets. This investment will not only bolster the domestic SiC manufacturing ecosystem and create thousands of high-skill jobs but also provide a technological foundation to accelerate the transition to a more energy-efficient society. From an adhesives and sealants perspective, the development of high-temperature resistant and high-reliability materials capable of withstanding the demanding operating environments of SiC modules remains a crucial challenge.

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Source: <https://us.bosch-press.com/pressportal/us/en/press-release-31424.html>

Collected: July 17, 2026 | Automated Research System (Gemini API)



# #10 Aduro and ECOCE Launch HCT Testing in Mexico for Flexible Plastic Packaging Waste, Recovering Liquid Hydrocarbons from Multi-Layer Adhesives-Containing Materials

Published July 16, 2026   Aduro Clean Technologies   Canada



## OVERVIEW

Aduro Clean Technologies and ECOCE, A.C. have launched a Hydrochemolytic™ Technology (HCT) testing campaign for post-consumer flexible plastic packaging waste streams in Mexico. This phase aims to convert multi-layer packaging, including materials with adhesives, into liquid hydrocarbon products, assessing their viability for circular plastic applications. The initiative targets difficult-to-recycle flexible plastics, seeking to recover valuable resources and significantly contribute to a circular economy by addressing waste streams typically unsuitable for mechanical recycling.

### Key Findings: Aduro and ECOCE Initiate HCT Testing in Mexico for Flexible Plastic Packaging Waste, Recovering Liquid Hydrocarbons from Complex Adhesive-Containing Materials

Aduro Clean Technologies and ECOCE, A.C., a prominent environmental organization in Mexico, have commenced a Hydrochemolytic™ Technology (HCT) testing campaign for post-consumer flexible plastic packaging waste streams in Mexico. This pivotal initiative aims to efficiently convert multi-layer packaging materials, including those containing adhesives and traditionally difficult to mechanically or physically recycle, into liquid hydrocarbon products. The assessment will determine the suitability of these recovered resources for reintegration into circular plastic applications.

#### Technical & Business Details

- **Hydrochemolytic™ Technology (HCT):** HCT is a proprietary chemical recycling process that utilizes water and specialized catalysts to depolymerize plastics into lower molecular weight liquid hydrocarbons. This technology is particularly effective for complex, multi-layer packaging materials that combine different types of plastics and adhesives. By being able to process these mixed materials as a single, homogenous feedstock, HCT overcomes the limitations of conventional mechanical recycling methods.
- **Targeted Waste Streams:** The primary focus of the testing campaign is flexible plastic packaging waste, such as food wrappers, films, and sachets, which are typically challenging to collect and have low recycling rates. Many of these waste materials feature multi-layer constructions bonded with adhesives to enhance durability and barrier properties.
- **Contribution to the Circular Economy:** The liquid hydrocarbon products generated by HCT are high-value feedstocks that can be directly reintroduced into the manufacturing process for new plastics. This reduces the reliance on virgin plastics and enhances resource efficiency across the entire plastic lifecycle.

## Background & Industry Context

The global plastic waste crisis continues to intensify, with flexible plastic packaging presenting a significant environmental challenge due to its complex composition and low recycling rates. The presence of dissimilar materials, including adhesives, further complicates recycling processes, making multi-layer packaging economically unviable to recycle through traditional means. In this context, chemical recycling technologies are gaining traction as promising solutions to valorize plastic waste and accelerate the transition towards a circular economy.

## Strategic Significance & Outlook

The HCT testing campaign by Aduro and ECOCE holds substantial promise for delivering concrete solutions to Mexico's plastic waste challenges. If commercially established, this technology could contribute to the processing and valorization of flexible plastic packaging waste not only in Mexico but also in other regions facing similar issues globally. This marks a significant step towards fostering a circular economy for plastics and achieving a more sustainable future. For the adhesives industry, it emphasizes the growing imperative for designing materials with end-of-life considerations and recyclability in mind.

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Source: <https://investors.adurocleantech.com/press-releases/press-releases-details/2026/Aduro-and-ECOCE-Complete-Phase-1-Feedstock-Mapping-Advance-Mexico-Plastics-Collaboration-to-HCT-Testing/default.aspx>



# #11 TSMC Commits Additional \$100 Billion to U.S. Semiconductor Manufacturing and Packaging, Bringing Total Investment to \$265 Billion for 12 Facilities

Published July 16, 2026   NIST - National Institute of Standards and Technology   USA



## OVERVIEW

TSMC has announced an additional \$100 billion investment in advanced semiconductor manufacturing and packaging facilities in the U.S., as part of a historic trade and investment agreement between the U.S. and Taiwan. This new commitment brings TSMC's total U.S. investment to \$265 billion, supporting the construction of 12 advanced semiconductor and packaging facilities. The massive capital injection is expected to significantly strengthen domestic manufacturing, create tens of thousands of jobs, and advance U.S. technological leadership.

### **Key Findings: TSMC Pledges Additional \$100 Billion for U.S. Semiconductor Manufacturing and Packaging, Totaling \$265 Billion for 12 Facilities**

TSMC, the world's largest dedicated independent semiconductor foundry, has announced an additional \$100 billion investment in advanced semiconductor manufacturing and packaging facilities in the United States. This commitment comes as part of a historic trade and investment agreement between the U.S. and Taiwan. With this new pledge, TSMC's total investment in the U.S. will reach an unprecedented \$265 billion, designated for the construction of 12 state-of-the-art semiconductor fabrication and packaging facilities across the country. This monumental investment is expected to dramatically reinforce U.S. domestic manufacturing capabilities, create tens of thousands of high-value jobs, and solidify America's technological leadership for the future.

#### **Technical & Business Details**

- **Advanced Semiconductor Manufacturing and Packaging:** The investment primarily targets cutting-edge logic chip manufacturing processes (e.g., 3nm and 2nm nodes) and advanced packaging solutions that enable High-Bandwidth Memory (HBM) and 2.5D/3D stacking technologies. These are indispensable components for next-generation technologies such as Artificial Intelligence (AI), High-Performance Computing (HPC), and advanced data centers.
- **Job Creation and Economic Impact:** TSMC anticipates that this colossal investment will generate tens of thousands of direct and indirect jobs. This includes construction workers, semiconductor manufacturing technicians, and R&D personnel, creating ripple effects across the entire related supply chain and revitalizing regional economies throughout the U.S.
- **Strengthening U.S.-Taiwan Cooperation:** The investment agreement is seen as further deepening the economic and strategic ties between the United States and Taiwan. Collaboration in the semiconductor supply chain is a mutual interest for both nations, increasingly vital for national security.

## Background & Industry Context

The U.S. CHIPS and Science Act has provided substantial incentives to bolster domestic semiconductor manufacturing, driven by geopolitical risks and the vulnerabilities of past supply chains, leading the U.S. to strongly advocate for reshoring semiconductor production. The explosive growth of AI demand has further amplified the strategic importance of advanced semiconductor technology, attracting massive investments from global enterprises. TSMC's commitment responds directly to these policy mandates and market demands.

## Strategic Significance & Outlook

TSMC's unparalleled investment is set to establish the U.S. as one of the world's premier hubs for advanced semiconductor manufacturing and packaging. This will enhance the resilience and security of the global semiconductor supply chain, providing a robust foundation for the U.S. to assume a leading role in next-generation technological innovations, particularly in AI and HPC. This represents a decisive strategic move shaping the future of the global semiconductor industry. In the field of adhesives and sealants, the demand for high-reliability materials in these advanced packaging facilities will rapidly escalate.

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Source: <https://www.nist.gov/news-events/news/2026/07/trump-administration-secures-additional-100-billion-us-semiconductor>



# #12 Master Bond Unveils UV16Med-FD, a UV Curable Epoxy with Fluorescent Dye for Medical Devices, Ensuring ISO 10993-5 Biocompatibility and Enhanced Defect Detection

Published July 13, 2026   AZoM   USA



## OVERVIEW

Master Bond has launched UV16Med-FD, a single-component, low-viscosity, UV curable epoxy system with an integrated fluorescent dye for medical device applications. This innovative adhesive allows for visual inspection of bond lines under UV black light, significantly improving the detection of voids and overflow during manufacturing. It complies with ISO 10993-5 cytotoxicity standards and offers robust resistance to various sterilizing agents, enhancing both product reliability and manufacturing efficiency.

### **Key Findings: Master Bond Launches UV16Med-FD, a Fluorescent UV Curable Adhesive for Medical Devices, Meeting ISO 10993-5 Cytotoxicity Standards and Streamlining Defect Detection**

Master Bond has introduced UV16Med-FD, a single-component, low-viscosity, UV curable epoxy system with an integrated fluorescent dye, specifically designed to meet the stringent quality control and manufacturing efficiency demands of medical device applications. This groundbreaking adhesive dramatically simplifies the detection of defects such as voids and overflow during the manufacturing process, allowing for visual verification of adhesive placement simply by illuminating it with a UV black light, thereby reducing human error.

#### **Technical & Clinical Details**

- **Visualization via Fluorescent Dye:** The fluorescent dye incorporated into UV16Med-FD emits a distinct glow under UV (black light) illumination. This feature allows for immediate, non-destructive visual confirmation of adhesive application areas, quantity, and any potential inconsistencies or defects. This capability is particularly beneficial for ensuring reliability in devices with complex internal structures or minute bonding areas.
- **ISO 10993-5 Compliance & Sterilization Resistance:** This product meets ISO 10993-5 cytotoxicity testing standards, affirming its safety for biological contact within medical devices. Furthermore, it demonstrates excellent resistance to common medical sterilizing agents and chemicals, including acids, bases, solvents, ethylene oxide (EtO), and glutaraldehyde, contributing to extended device longevity and maintained reliability.
- **Low Viscosity and Rapid Curing:** Its low viscosity facilitates precise application into narrow gaps and onto delicate components. The rapid UV light curing mechanism significantly enhances production throughput, contributing to reductions in manufacturing costs.

## Background & Industry Context

The medical device industry mandates exceptionally high quality control standards to guarantee product performance and patient safety. Adhesives are integral to the assembly of many medical devices, and any defects in their application can lead to critical failures. The ability to easily detect minute defects that might be challenging for traditional visual or automated inspection systems, through the use of a fluorescent dye, offers substantial value in reducing manufacturing costs and risks.

## Strategic Significance & Outlook

The introduction of UV16Med-FD provides medical device manufacturers with a powerful tool to innovate quality control processes and significantly enhance product reliability. This technology is expected to find broad application in the manufacturing of various medical devices, including catheters, syringes, endoscopes, and diagnostic probes. By offering such innovative solutions, Master Bond continues to elevate the standards for adhesives in the medical device sector, contributing to the market introduction of safer and higher-quality medical products.

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Source: <https://www.azom.com/news.aspx?newsID=65613>

Collected: July 17, 2026 | Automated Research System (Gemini API)

# #13 AI Fuels "Golden Age" of Advanced Packaging: Amkor-TSMC 10-Year CoWoS Deal Strengthens U.S. Supply Chain, ASE Builds 6 New Fabs Globally

Published July 17, 2026   TechNews   Taiwan



## OVERVIEW

2026 marks the "golden age" of advanced packaging, with AI-driven demand prompting massive investment expansions from global packaging and test manufacturers. Amkor secured a 10-year long-term cooperation agreement with TSMC in June 2026, bolstering the U.S. domestic supply chain for "advanced wafer manufacturing-packaging and test" through TSMC's procurement of CoWoS packaging and test capacity from Amkor. Concurrently, ASE is undergoing its largest factory expansion cycle to date, with plans to commence construction on six new facilities globally in 2026.

### Key Findings: AI Demand Drives "Golden Age" of Advanced Packaging, with Amkor-TSMC Partnership and ASE Factory Expansions Significantly Boosting Capacity

The year 2026 has witnessed the semiconductor packaging and test industry enter a "golden age" of massive investment and expansion, largely propelled by the explosive growth in demand for Artificial Intelligence (AI). This trend is clearly demonstrated by strategic partnerships and unprecedented factory expansion plans from key industry players. Notably, Amkor has entered into a 10-year long-term cooperation agreement with TSMC, the world's largest foundry, to provide CoWoS (Chip-on-Wafer-on-Substrate) packaging and test capacity in the United States, thereby strengthening the domestic "advanced wafer manufacturing-packaging and test" supply chain.

#### Technical & Business Details

- **The Importance of CoWoS Technology:** CoWoS is a critical 2.5D/3D advanced packaging technology indispensable for high-performance AI/HPC (High-Performance Computing) chips. It enables the integration of multiple chiplets (e.g., CPU, GPU, High-Bandwidth Memory HBM) onto a silicon interposer, facilitating faster inter-chip communication and improved power efficiency. Amkor's investment in this technology and its collaboration with TSMC are paramount in addressing the performance bottlenecks of AI chips.
- **ASE's Global Expansion:** Advanced Semiconductor Engineering (ASE), the world's largest independent outsourced semiconductor assembly and test (OSAT) provider, is also embarking on its largest factory expansion cycle to date in 2026. The company plans to construct a total of six new packaging facilities globally, underscoring the urgency across the industry to augment production capacity in response to soaring AI chip demand.
- **Strengthening Regional Supply Chains:** The partnership between Amkor and TSMC aligns with the broader objective of mitigating geopolitical risks associated with semiconductor supply chain concentration and enhancing domestic advanced packaging capabilities in the U.S. This reflects the increasing importance of geopolitical considerations and supply chain resilience.



## Background & Industry Context

The increasing complexity and scale of AI models are placing unprecedented demands on conventional semiconductor manufacturing processes and packaging technologies. As the limits of Moore's Law become apparent, advanced packaging is emerging as a "More than Moore" solution, serving as a key technological enabler for the continuous improvement of chip performance. Consequently, there is a growing demand for higher-performance and more power-efficient semiconductors across data centers, edge AI, and autonomous driving applications.

## Strategic Significance & Outlook

These large-scale investments and collaborations by major players like Amkor, TSMC, and ASE are set to drive significant innovation and a dramatic increase in production capacity for advanced packaging technologies, further accelerating the development of AI chips. This will enable further advancements in AI, enhanced data processing capabilities, and the realization of new technological applications. From an adhesives and sealants perspective, a dramatic increase in demand is anticipated for higher-performance and more diverse material solutions to ensure thermal management, electrical performance, and mechanical reliability in these ultra-high-density packages.

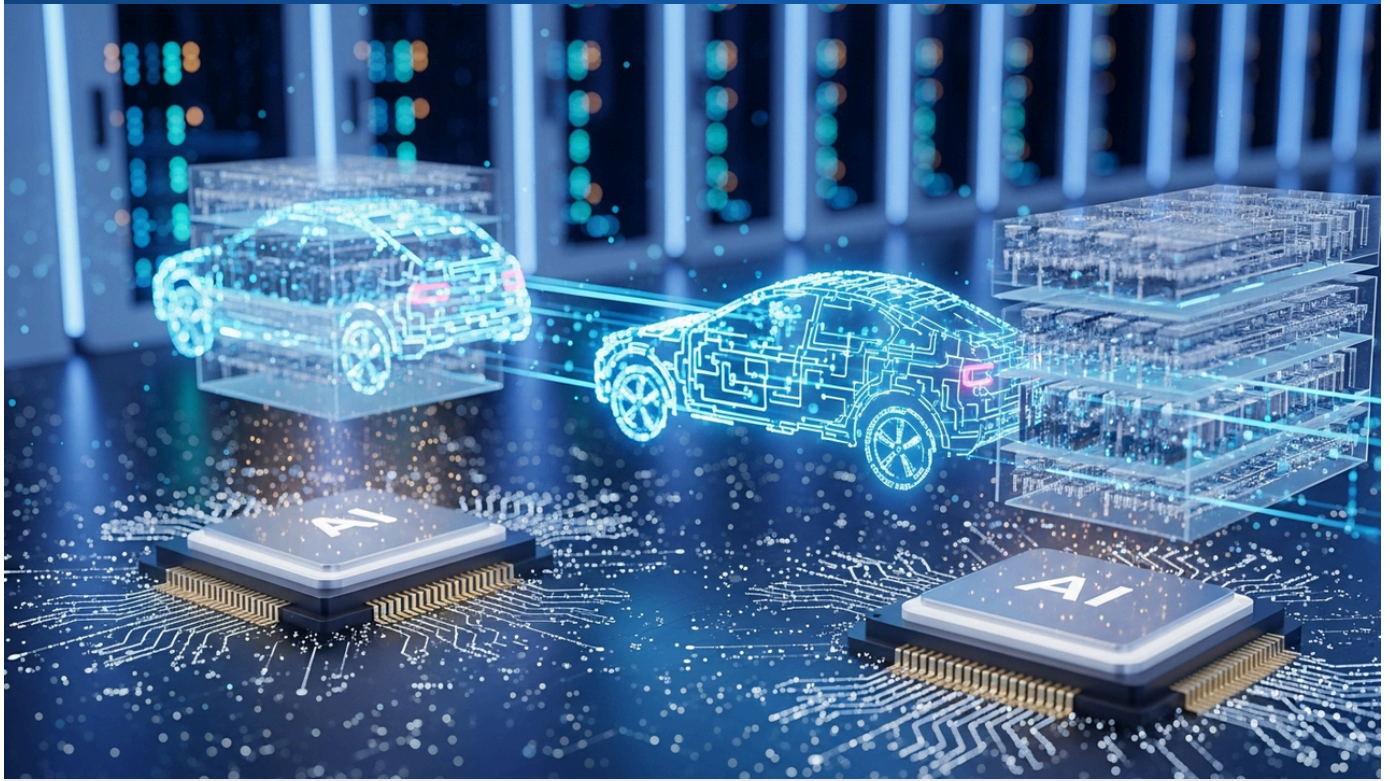
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Source: <https://eu.36kr.com/en/p/3899029791623044>



# #14 AI and EVs Drive 2026 Semiconductor Market, High-Bandwidth Memory (HBM) and Advanced Manufacturing Nodes Emerge as Key Growth Themes

Published July 14, 2026   Kraken   USA



## OVERVIEW

The 2026 semiconductor industry is experiencing significant growth, propelled by the rapid expansion of AI infrastructure, continued data center augmentation, and automotive electrification. Key growth themes include the surging demand for High-Bandwidth Memory (HBM) and the transition to advanced manufacturing nodes. These technologies are critical for maximizing AI chip performance and significantly boosting data processing capabilities, driving innovation and market expansion across the entire semiconductor sector.

### Key Findings: AI and EVs are Primary Growth Drivers for 2026 Semiconductor Market, with HBM and Advanced Manufacturing Nodes Leading Innovation

In 2026, the semiconductor industry is experiencing a highly dynamic growth phase, driven by three powerful technological megatrends: the explosive expansion of AI infrastructure, the continuous augmentation of data centers, and the pervasive electrification of the automotive sector (EVs). This market surge is particularly fueled by the escalating demand for High-Bandwidth Memory (HBM) and the ongoing transition to advanced manufacturing nodes, which enable finer process technologies. These advancements are indispensable for maximizing AI chip performance and dramatically boosting data processing capabilities, serving as powerful catalysts for innovation and market expansion across the entire semiconductor industry.

#### Technical & Business Details

- **High-Bandwidth Memory (HBM):** HBM is an innovative memory technology that stacks multiple DRAM dies vertically and connects them to a processor via a silicon interposer, achieving orders of magnitude higher data transfer speeds than conventional DDR memory. In AI training and inference, High-Performance Computing (HPC), and graphics processing, HBM is key to unlocking the full potential of GPUs and overcoming critical memory bandwidth bottlenecks.
- **Advanced Manufacturing Nodes:** The transition to cutting-edge process nodes, such as 3nm and 2nm, enables the miniaturization of transistors and increased integration density, leading to substantial improvements in chip performance and power efficiency. This allows for the efficient processing of more complex and larger AI models, while also contributing to device miniaturization and reduced power consumption.
- **Synergistic Effects of AI and EVs:** The evolution of AI necessitates massive data processing and learning, accelerating demand for high-performance chips equipped with HBM and advanced process technologies. Concurrently, the proliferation of EVs is dramatically increasing the demand for automotive semiconductors in power management units, sensors, infotainment systems, and other critical components.

## Background & Industry Context

The global semiconductor market continues to enjoy structural growth driven by pervasive megatrends including AI, 5G, IoT, and autonomous driving. Particularly in the AI sector, the relentless growth in model size and data volume demands constant innovation to break through performance and power efficiency limits. Consequently, not only chip design but also packaging and memory technologies have become critical determinants of overall system performance.

## Strategic Significance & Outlook

HBM and advanced manufacturing nodes will continue to drive growth in the semiconductor industry. This will lead to enhanced data center processing capabilities, accelerated adoption of edge AI devices, and the closer realization of fully autonomous vehicles. From the perspective of adhesives and sealants, demand is projected to surge for ultra-thin die-attach materials, high-performance underfills for HBM stacking and heterogeneous integration packaging, and thermally conductive adhesives and encapsulants for thermal management in high-heat environments. These materials are indispensable for ensuring the reliability and performance of next-generation semiconductor components, shaping the future of computing.

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Source: <https://www.kraken.com/in/learn/semiconductor-stocks-to-watch>

Collected: July 17, 2026 | Automated Research System (Gemini API)



# #15 BYK Acquires Radar Dome Measurement System Company, Bolstering Presence in Autonomous Driving Market and Anticipating Related Adhesive and Sealant Demand

Published July 16, 2026   Adhesives & Sealants Industry   Germany



## OVERVIEW

BYK, a German specialty chemicals manufacturer, announced a strategic acquisition of a company specializing in radar dome measurement systems for the autonomous driving market. This move strengthens BYK's foothold in a critical segment of automotive technology. The rapid advancements in autonomous driving are expected to drive increasing demand and more stringent performance requirements for adhesives and sealants used in automotive electronics and sensors, presenting significant opportunities for BYK's material solutions.

### Key Findings: BYK Acquires Radar Dome Measurement System Company, Securing Strategic Foothold in Autonomous Driving Market and Anticipating Adhesive/Sealant Opportunities

BYK, a German specialty chemicals manufacturer, has announced a strategic acquisition of a company that provides high-performance radar dome measurement systems for the autonomous driving market. This move signifies BYK Group's enhanced entry into a critical technological segment vital for automotive safety and performance. While indirectly related to the adhesives and sealants industry, the rapid evolution of autonomous driving technology is expected to drive increased demand and more stringent performance requirements for the adhesives and sealants used in associated electronic components and sensors. BYK is keenly eyeing these emerging business opportunities in related fields.

#### Technical & Business Details

- **Radar Dome Measurement Technology:** The acquired company provides highly precise systems for measuring critical parameters of radar domes, such as transparency, reflectivity, and material homogeneity, which protect the radar sensors in autonomous vehicles. This technology ensures the accurate functioning of radar systems and, consequently, the reliability of autonomous driving. It is essential for optimizing the performance of millimeter-wave radars and maintaining vehicle detection accuracy in adverse weather conditions.
- **BYK's Strategic Relevance:** BYK is renowned for its strengths in paint additives and instrumentation. While not a direct manufacturer of adhesives, the production processes for radar domes involve composite materials, surface treatments, and coatings that often utilize adhesives and sealants. Through this acquisition, BYK gains deeper insights into related material technologies, which can inform future optimization of its additives and measurement solutions.
- **Market and Technology Convergence:** Autonomous driving is a field where sensors, AI, communication, and advanced materials converge. Measurement systems are indispensable for guaranteeing performance. BYK's move indicates an aim to provide value across the entire ecosystem, rather than focusing solely on a single product segment.

## Background & Industry Context

Autonomous driving technology represents one of the most significant and rapidly evolving areas in the automotive industry, promising substantial improvements in safety, efficiency, and convenience. However, its realization critically depends on the precision, reliability, and durability of sensors under extreme environmental conditions. Radar sensors, alongside LiDAR and cameras, act as the 'eyes' of autonomous vehicles, crucial for detecting objects in poor weather or darkness. The quality of the radar domes protecting these sensors directly impacts the overall performance of autonomous systems.

## Strategic Significance & Outlook

This strategic acquisition significantly expands BYK's expertise and market access within the autonomous driving sector. It represents a crucial step for BYK to potentially develop additives and inspection solutions that contribute to improving the performance of adhesives, sealants, coatings, and composite materials used in radar domes and other automotive sensors. As autonomous vehicles become more prevalent, the demand for related high-performance materials is expected to increase continuously, positioning BYK to capitalize on these significant market growth opportunities.

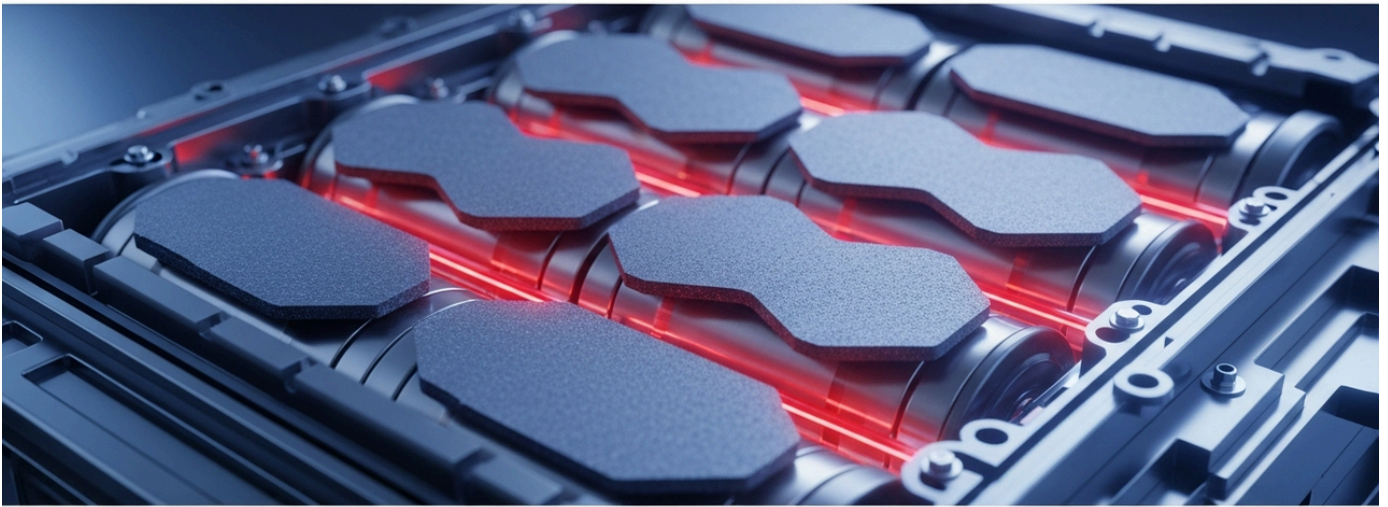
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Source: <https://www.adhesivesmag.com/articles/102527-byk-announces-strategic-acquisition-in-the-autonomous-driving-market>



# #16 Graphite Proves Essential for NEV Battery Thermal Management, Cutting Peak Temperatures by up to 35%; Sheen Technology Offers Lightweight Graphene Thermal Pads

Published July 13, 2026   Sheen Technology   China



## OVERVIEW

Graphite is highlighted as a critical material for thermal management in New Energy Vehicle (NEV) batteries, capable of homogenizing hot spots and reducing peak temperatures by up to 35% due to its high in-plane thermal conductivity. Sheen Technology offers advanced graphene thermal pads featuring high vertical thermal conductivity, excellent compressibility, and low thermal resistance. These pads significantly contribute to lightweight battery designs and enhance overall cooling performance, crucial for safety and longevity.

### Key Findings: Graphite Essential for NEV Battery Thermal Management, Sheen Technology's Graphene Thermal Pads Reduce Peak Temperatures by up to 35%

Efficient thermal management is an exceptionally critical factor in maximizing the performance, safety, and lifespan of New Energy Vehicle (NEV) batteries. In this context, graphite has emerged as a material with outstanding thermal conductivity properties, proven to effectively homogenize hot spots within battery packs and reduce peak temperatures by up to 35%. To address this challenge, Sheen Technology is offering graphene thermal pads characterized by high vertical thermal conductivity and low thermal resistance, contributing significantly to lightweight battery designs and optimized cooling performance.

#### Technical & Business Details

- **Graphite's Thermal Conductivity:** Graphite is an anisotropic material exhibiting extremely high thermal conductivity, particularly in-plane (which can reach several thousand W/m·K). This property enables rapid heat spreading from battery cells, preventing the formation of localized hot spots. This mechanism is crucial for preventing battery overheating and mitigating risks of performance degradation, premature aging, and even thermal runaway.
- **Sheen Technology's Graphene Thermal Pads:** The graphene thermal pads offered by Sheen Technology possess properties superior to conventional graphite. Through a proprietary manufacturing process, the thermally conductive filler (graphene) is vertically oriented, dramatically enhancing thermal conductivity in the thickness (z-axis) direction. Additionally, they exhibit high compressibility, allowing them to conform closely to complex battery module surfaces and minimize thermal resistance caused by air gaps.
- **Contribution to Lightweighting:** Highly efficient thermal pads enable the design of smaller and lighter cooling systems, thereby contributing to extended range and improved energy efficiency for the entire NEV.

## Background & Industry Context

The rapid expansion of the New Energy Vehicle market necessitates advancements in high energy density battery technologies and fast-charging capabilities. However, this leads to increased heat generation within battery packs, making effective thermal management the paramount challenge for battery safety and longevity. Thermal runaway can be a severe cause of EV accidents, compelling automotive manufacturers to seek highly reliable thermal management solutions. Thermal Interface Materials (TIMs) are key components in addressing this challenge.

## Strategic Significance & Outlook

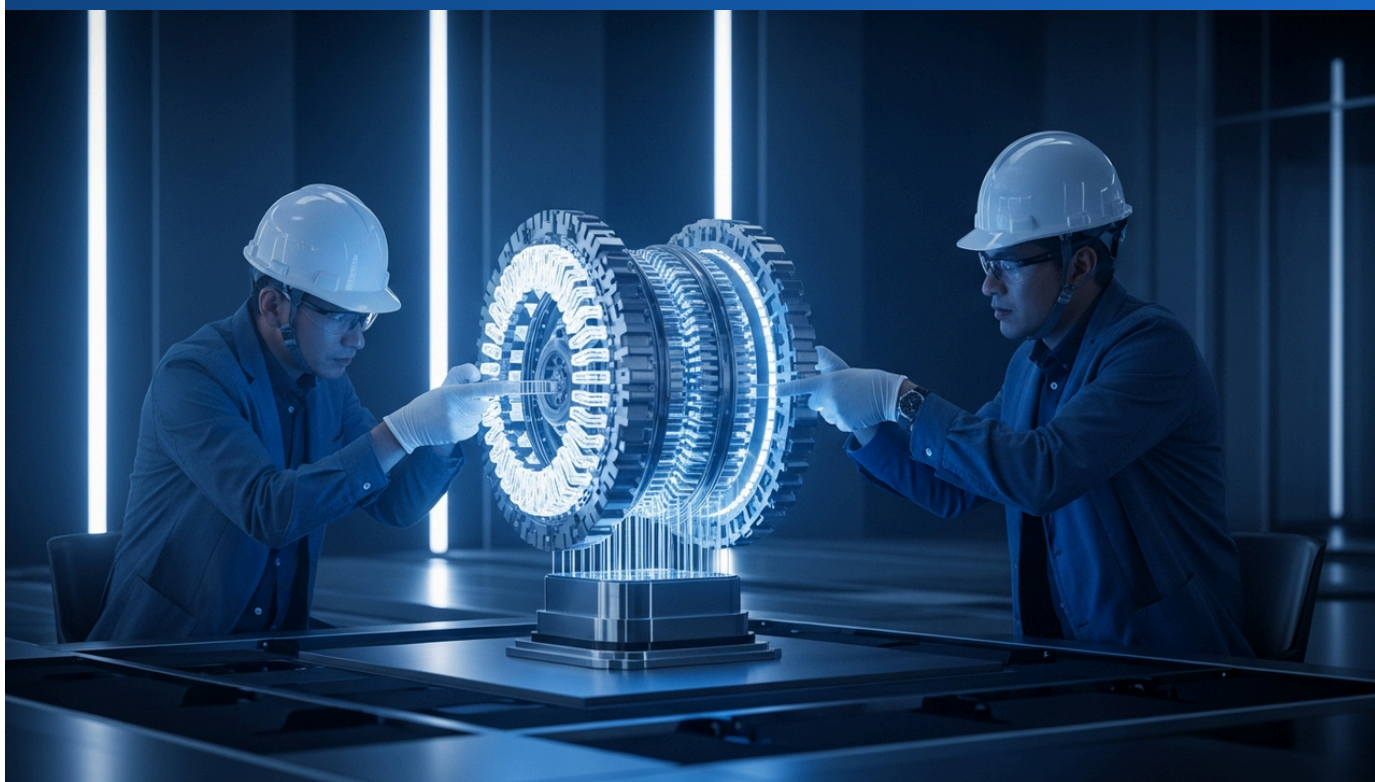
Graphite and graphene-based thermal pads are expected to expand their applications beyond NEV batteries to all sectors where thermal management is critical, including data centers, 5G communication equipment, high-performance computing, and power electronics. Innovative material development by companies like Sheen Technology will enable further advancements in these technologies, leading to safer and higher-performing products. From the perspective of adhesives and sealants, the demand for high-temperature resistant and vibration-resistant adhesives to securely fix these high-performance TIMs within battery packs and ensure long-term reliability will significantly increase.

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Source: <https://www.sheenthermal.com/graphite-heat-dissipation-for-new-energy-vehicle-batteries.html>

# #17 New 230°C High-Heat-Resistant Epoxy Encapsulation Material (EME-G785 Series) Boosts SiC Power Module Applications and Thermal Performance

Published July 14, 2026   creating nano technologies inc.   Japan



## OVERVIEW

Creating Nano Technologies Inc. has introduced the EME-G785 series, a new epoxy encapsulation material with 230°C heat resistance, poised to expand applications for SiC power modules. This material achieves a record-high glass transition temperature of 230°C among epoxy encapsulants, maintaining superior physical properties under extreme operating conditions. Compatible with soldering processes used for connections to sintered materials and heat sinks, the EME-G785 series significantly enhances the thermal performance and reliability of SiC power modules.



### Key Findings: Creating Nano Technologies Develops EME-G785 Series, a 230°C High-Heat-Resistant Epoxy Encapsulation Material for SiC Power Modules, Expanding Applications with Industry-Leading Performance

Creating Nano Technologies Inc. has announced the development of the 'EME-G785 series,' an epoxy encapsulation material featuring exceptionally high heat resistance, specifically engineered for next-generation silicon carbide (SiC) power modules. This innovative material achieves a glass transition temperature (Tg) of 230°C, an industry-leading figure for epoxy resin encapsulants, and maintains superior electrical and mechanical properties even under extreme high-temperature operating conditions. This breakthrough is expected to maximize the performance of SiC power modules and substantially expand their application fields.

#### Technical & Business Details

- **Industry-Leading Heat Resistance:** The EME-G785 series overcomes the heat resistance limitations of many conventional epoxy encapsulants by achieving an impressively high Tg of 230°C. This elevated heat resistance is critical for accommodating the higher junction temperatures of SiC power modules and ensuring their long-term reliability.
- **Superior Property Retention:** Even in high-temperature environments, the material consistently maintains crucial properties such as electrical insulation, mechanical strength, moisture resistance, and thermal cycle stability. This minimizes the risk of performance degradation or failure, even when power modules are exposed to harsh operating conditions.
- **Compatibility with Soldering Processes:** This encapsulant is compatible with soldering processes—typically conducted above 200°C—used for connecting SiC chips to heat sinks or sintered materials in power module assembly. This enhances manufacturing process flexibility and contributes to improved yields.
- **Enabling Advanced SiC Power Modules:** High-heat-resistant encapsulants like the EME-G785 series facilitate higher power density, miniaturization, and enhanced reliability for SiC power modules. This, in turn, enables their application in a broader range of high-efficiency applications, including electric vehicles (EVs), industrial motor drives, and renewable energy systems.



## Background & Industry Context

SiC power semiconductors are rapidly gaining adoption in EV inverters, industrial equipment, and renewable energy sectors due to their superior low-loss characteristics. However, SiC devices can operate at significantly higher junction temperatures than silicon (Si) devices, making the development of packaging materials, particularly encapsulants, capable of withstanding these extreme temperatures an urgent challenge. Traditional encapsulants have historically faced issues with degradation and reliability loss at elevated temperatures.

## Strategic Significance & Outlook

The introduction of innovative high-heat-resistant epoxy encapsulants like the EME-G785 series unlocks the full potential of SiC power modules, expanding design freedom and creating new market opportunities. This is expected to significantly contribute to improving energy efficiency across society, enabling longer EV ranges, faster charging times, and higher efficiency in renewable energy systems. This Japanese materials technology is poised to be a powerful driver in the global power electronics industry's advancement.

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Source: <https://www.creating-nanotech.com/en-US/newsc320-230-c-high-heat-resistant-epoxy-encapsulation-material-expands-applications-for-sic-power-modules>

Collected: July 17, 2026 | Automated Research System (Gemini API)

# #18 SEMI Advanced Packaging Summit 2026 Highlights HBM and 2.xD Packaging as Key Innovators for AI/HPC Performance and Power Efficiency

Published July 14, 2026 SEMI USA



## OVERVIEW

The SEMI Advanced Packaging Summit 2026, themed "Packaging the Future of AI – From Silicon to Photon," deeply explored the evolution and industrial implications of packaging technologies for the AI era. Discussions highlighted market shifts driven by expanding AI semiconductor demand and critical technologies for advanced packaging, such as System Technology Co-Optimization (STCO). Emphasized innovations included customized High-Bandwidth Memory (HBM) and Samsung's 2.xD packaging portfolio, both crucial for meeting the performance and power efficiency demands of AI/HPC.

### Key Findings: SEMI Advanced Packaging Summit 2026 Emphasizes HBM and 2.xD Packaging as Pivotal for Innovating AI/HPC Performance and Power Efficiency

The SEMI Advanced Packaging Summit 2026, held under the theme "Packaging the Future of AI – From Silicon to Photon," delved into the evolving landscape and industrial implications of semiconductor packaging technologies in the era of Artificial Intelligence (AI). The summit highlighted market transformations driven by the explosive demand for AI semiconductors and crucial technologies enabling high performance and superior power efficiency. Specifically, advanced packaging solutions such as customized High-Bandwidth Memory (HBM) and Samsung's 2.xD packaging portfolio were strongly emphasized as key enablers for dramatically boosting the performance of next-generation AI/HPC (High-Performance Computing) chips and addressing critical power efficiency challenges.

#### Technical & Business Details

- **Enhancing AI/HPC Chip Performance:** The increasing complexity of AI models and the explosion of data volumes place unprecedented demands on chip processing power and memory bandwidth. HBM achieves significantly higher data throughput than conventional memory by vertically stacking multiple DRAM dies and connecting them to the processor over short distances. Furthermore, Samsung's 2.xD packaging effectively integrates multiple chiplets (e.g., CPU, GPU, HBM) using silicon interposers or bridge technologies, optimizing overall system performance and power efficiency.
- **System Technology Co-Optimization (STCO):** The summit underscored the importance of STCO, an approach that holistically optimizes chip, package, and system designs. This methodology aims to enhance overall system performance and power efficiency, moving beyond the mere maximization of individual component performance. This indicates that advanced packaging has transcended simple physical connectivity to become a strategic element deeply involved from the design phase.

- **"Silicon to Photon" Outlook:** The theme "From Silicon to Photon" alludes to the potential integration of optical technologies (photonics) into packaging to overcome data transmission bottlenecks inherent in electrical signaling. This represents a significant direction for achieving ultra-high-speed and low-power data communication in the future.

## Background & Industry Context

As the limits of semiconductor scaling (Moore's Law) approach, advanced packaging technologies are being hailed as the "More than Moore" frontier, enabling continuous improvements in chip performance. Megatrends such as AI, data centers, and autonomous driving are driving semiconductor demand, with the enhanced performance and power efficiency of AI chips being crucial for realizing sustainable computing. Strengthening supply chain resilience also remains a major factor driving international cooperation and technological innovation.

## Strategic Significance & Outlook

The technological trends highlighted at the SEMI Advanced Packaging Summit are expected to accelerate dramatic improvements in AI/HPC chip performance and power efficiency, leading to advancements in data centers, proliferation of edge AI, and new scientific discoveries across various fields. From the perspective of adhesives and sealants, the development of even more innovative material solutions will be essential for ultra-high-density bonding, thermal management, electrical characteristics, and ensuring long-term reliability in HBM stacking and 2.xD integrated packages. This will position material suppliers to play an even more strategic role within the semiconductor ecosystem.

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Source: <https://www.semi.org/ko/connect/events/advanced-packaging-summit-2026>

Collected: July 17, 2026 | Automated Research System (Gemini API)



# #19 Sheen Technology Releases Optimal Thermal Adhesive Application Guide for Screw-Less AI Edge Sensors and EV Battery Designs

Published July 14, 2026   Sheen Technology   China



## OVERVIEW

Sheen Technology has published a detailed tutorial on optimal thermal adhesive application, addressing the growing trend of "screw-less" designs in AI edge sensors and EV battery monitors. In the 2026 electronics industry, thermal adhesives are crucial for combining structural bonding with efficient heat dissipation. This guide elucidates precise application processes for CPUs, power modules, and EV battery packs, considering factors like thermal conductivity, cure time, bond strength, and flame retardancy, thereby supporting reliable and high-performance product designs.



### Key Findings: Sheen Technology Publishes Optimal Thermal Adhesive Application Guide for Screw-Less AI Edge Sensors and EV Battery Designs

Sheen Technology has released a detailed tutorial on the proper application methods for thermal adhesives (thermal glues), addressing the rapidly growing trend of "screw-less" designs in AI edge sensors and EV battery monitors within the contemporary electronics industry. As of 2026, thermal adhesives, which simultaneously provide structural bonding and efficient heat dissipation, have become indispensable materials for high-density, high-performance electronic devices. This guide covers the application process for key uses such as CPUs, power modules, and EV battery packs, considering specific performance requirements like thermal conductivity, cure time, bond strength, and flame retardancy, thereby aiding in the design of highly reliable and high-performance products.

#### Technical & Business Details

- **Importance of Thermal Adhesives:** Thermal adhesives incorporate thermally conductive fillers within an adhesive matrix, enabling components to be robustly joined while efficiently dissipating generated heat. Compared to traditional methods using screws or clips combined with separate thermal interface materials (TIMs), thermal adhesives offer reductions in part count, weight, assembly process simplification, and improved space efficiency.
- **"Screw-Less" Design Trend:** In applications demanding both miniaturization and high performance, such as AI edge devices and EV Battery Management Systems (BMS), conventional mechanical fastening methods can contribute to spatial constraints and increased weight. "Screw-less" designs actively adopt thermal adhesives to overcome these challenges and enhance product competitiveness.
- **Optimization of Application Techniques:** The tutorial focuses on application techniques to maximize the performance of thermal adhesives. This includes aspects like uniform adhesive application, prevention of air bubbles, precise control of film thickness, and accurate setting of curing conditions (temperature, time). These factors directly influence final performance metrics such as thermal conductivity (e.g., from 2 W/m·K to over 10 W/m·K), bond strength (shear and peel strength), and flame retardancy (e.g., UL 94 V-0).

## Background & Industry Context

Modern electronics process more power in smaller spaces, leading to severe heat generation issues. Excessive heat can shorten the lifespan of semiconductor components, degrade performance, and cause failures. In EV battery packs, thermal management is a critical factor directly impacting safety and driving range. In this context, thermally conductive adhesives are gaining increasing importance as solutions that resolve thermal problems while simultaneously improving manufacturing efficiency.

## Strategic Significance & Outlook

Detailed application guides like that provided by Sheen Technology offer practical knowledge to engineers and manufacturers considering thermal adhesive adoption, accelerating product development. The evolution of thermal adhesive technology and optimization of application processes will be indispensable for improving the reliability and performance of a wide range of high-function electronics, including electric vehicles, 5G communication infrastructure, advanced AI devices, and IoT sensors. Through this, Sheen Technology is expected to further solidify its position as a leader in thermal management solutions.

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Source: <https://www.sheenththermal.com/how-to-apply-thermal-glue-properly.html>

Collected: July 17, 2026 | Automated Research System (Gemini API)