Adhesive/Sealant

Weekly Intelligence Report

2026-06-07 | 28 articles | 9 countries

troy-technical.jp

This Week's Keyword

EV Battery Safety

New adhesives & barriers mitigate thermal runaway

28	9	12	230
articles	countries	W/m·K	°C
Total Articles Analyzed	Source Countries/Regions	Max TIM Conductivity	Max High-Tg EMC

All 28 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	Dow DOWSIL TC-3120 Gel	New Product	●●●●○	●●●●○	●●●●○	●●●●○	●●●●●	Dow launches 12 W/m·K thermal gel for AI networking and 800G/1.6T optical modules, minimizing outgassing.
#02	PatSnap EV Thermal Runaway	Analysis	●●●○○	●●○○○	●●●●○	●●●○○	●●●●○	Report highlights advanced adhesive formulations critical for preventing thermal runaway in EV and ESS.
#03	Arkema EV Battery Solutions	New Product	●●●●○	●●●●○	●●●●○	●●●●○	●●●●●	Arkema unveils next-gen materials for EV batteries, enhancing adhesion, energy density, and recyclability.
#04	QinanX UV Adhesives	New Product	●●○○○	●●●●●	●●●○○	●●○○○	●●●○○	QinanX offers fast-curing, high-clarity, low-shrinkage UV-curable adhesives for electronics and optics.
#05	PatSnap Adhesive Coverage	Analysis	●●●○○	●●○○○	●●●●○	●●●○○	●●●●○	Report on optimizing adhesive coverage to reduce cell delamination risks in advanced packaging and flexible displays.
#06	T-Global TG-AD30D Pad	New Product	●●●○○	●●●●○	●●●○○	●●●●○	●●●○○	T-Global launches low-outgassing thermal pad (3.0 W/m·K) for high-reliability electronics.
#07	China Adv Pkg Materials	Market Overview	●○○○○	●○○○○	●●●●●	●●●○○	●●●●●	SemiMedia reports China accelerating catch-up in advanced packaging materials for AI and HPC.
#08	Beckers Renewable Resin	Corporate Strategy	●●○○○	●●●●●	●●○○○	●●○○○	●●●○○	Beckers Group inaugurates new renewable resin manufacturing plant in India, bolstering sustainable coatings.
#09	Wacker ELASTOSIL® CM	New Product	●●●●●	●●●○○	●●●●●	●●●●○	●●●●●	Wacker unveils ceramifying thermal barriers (ELASTOSIL® CM) for enhanced EV battery safety during thermal runaway.
#10	tesa tesafilm® PAPER	New Product	●●○○○	●●●●●	●●○○○	●●○○○	●●●●●	tesa celebrates 90 years with sustainable production expansion and introduction of tesafilm® PAPER.
#11	Parker Lord CoolTherm	New Product	●●●●○	●●●●○	●●●●○	●●●●○	●●●●●	Parker Lord develops CoolTherm SF-1000, a low-cost liquid-dispensed solution for EV thermal runaway mitigation.
#12	Tecman ATP Pads	New Product	●●●○○	●●●●○	●●●●○	●●●●○	●●●●●	Tecman unveils Anti-Thermal Propagation (ATP) pads to prevent thermal runaway in Battery Energy Storage Systems.

#	Article Title	Type	Tech Novelty	Market Proximity	Market Impact	Data Reliability	US/EU Relevance	Summary
#13	PatSnap Thermal Stress	Analysis	●●●○	●●○○	●●●●	●●●○	●●●●	Report on thermal stress impact on battery adhesive strength over time, driven by new EU regulations.
#14	ORAFOL Acquires Maxpro	Corporate Strategy	●○○○	●●●●	●○○○	●●○○	●●●●	ORAFOL expands U.S. presence with Maxpro Manufacturing acquisition, strengthening functional films business.
#15	WEVO-CHEMIE WEVOSIL	New Product	●●●●	●●●●	●●●●	●●●●	●●●●	WEVO-CHEMIE unveils WEVOSIL 23130 high-performance silicone seal for enhanced EV battery thermal runaway protection.
#16	Henkel Acquires OLAPLEX	Corporate Strategy	●○○○	●●●●	●○○○	●●○○	●●●●	Henkel agrees to acquire OLAPLEX for $1.4 billion, strengthening position in prestige beauty market.
#17	Ammega Water-Based PU	New Process	●●●○	●●●●	●●●○	●●○○	●●●●	Ammega expands Georgia facility for world's first water-based polyurethane belt production, reducing VOCs.
#18	Henkel Adv Pkg Materials	New Product	●●●○	●●●○	●●●●	●●●●	●●●●	Henkel Adhesives innovates advanced semiconductor packaging materials for HPC and Generative AI.
#19	Alliance Talc Report	Analysis	●●●○	●●○○	●●●○	●●●○	●●●●	Report: Advanced talc applications crucial for EV battery thermal management and power electronics reliability.
#20	Sumitomo G785 Series	New Product	●●●●	●●●●	●●●●	●●●●	●●●●	Sumitomo Bakelite develops G785 Series high-Tg EMC (230°C) for next-gen SiC power modules, resolving stress issues.
#21	PatSnap Voiding Epoxies	Analysis	●●●○	●●○○	●●●●	●●●○	●●●●	Report: Reducing voiding in chip embedding epoxies critical for high-reliability systems in automotive and aerospace.
#22	PatSnap UV-Curable Adh.	Analysis	●●●●	●●○○	●●●●	●●●○	●●●●	Report: UV-curable adhesives achieve ultra-fast curing (2-3 seconds) for accelerated chip embedding.
#23	Brilliant Solvent-Free	New Product	●●●○	●●●●	●●●○	●●○○	●●○○	Brilliant Polymers showcases energy-efficient, VOC-free solvent-free adhesives for flexible packaging.
#24	DalFort Sells Polymer	Corporate Strategy	●○○○	●●●●	●○○○	●●○○	●●●●	DalFort Capital Partners closes second fund and sells Polymer Adhesives Holdings to DiversiTech Corporation.
#25	Organogel OPSA Paper	Research	●●●●	●○○○	●●●○	●●●●	●●●○	ResearchGate paper on semi-interpenetrating organogel OPSA with reversible hydrogen bonding for dynamic optical devices.
#26	Fengling UV Adhesives	New Product	●●○○	●●●●	●●●○	●●○○	●●●○	Fengling New Materials manufactures UV-curable and epoxy adhesives for electronics, medical, and optical industries.
#27	Siegwerk Cirkit Novaseal	New Product	●●●○	●●●●	●●●○	●●○○	●●●●	Siegwerk launches Cirkit Novaseal heat seal lacquer portfolio, integrating circular economy for packaging.
#28	Henkel LOCTITE® Marine	New Product	●●○○	●●●●	●●○○	●●○○	●●●●	Henkel to showcase LOCTITE® adhesives, sealants, and coatings for demanding marine applications at Nor-Fishing 2026.

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

Three Questions That Demand Your Decision This Week

❶ Is your EV battery platform ready for next-gen safety standards?

New EU regulations and breakthroughs like Wacker's ceramifying barriers (#09), Parker Lord's liquid foam (#11), and WEVO-CHEMIE's silicone seals (#15) are redefining thermal runaway protection. Does your current battery design meet these evolving safety benchmarks, or are you exposed to obsolescence and regulatory non-compliance?

❷ How will China's advanced packaging material surge impact your supply chain?

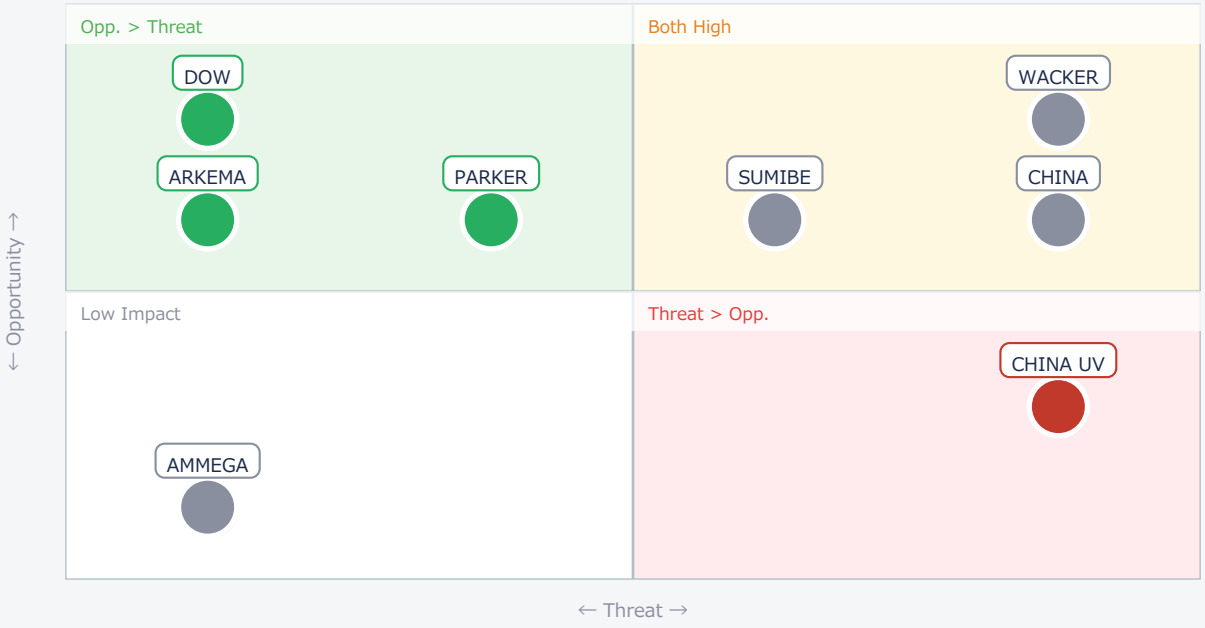
SemiMedia reports China's rapid catch-up in advanced packaging materials for AI/HPC (#07), with companies like QinanX (#04) and Fengling (#26) offering competitive UV-curable adhesives. Are your critical material supply chains diversified enough, and have you assessed the competitive threat from these emerging Asian players?

❸ Are your thermal management solutions keeping pace with AI/HPC demands?

The relentless drive for higher performance in AI and HPC chips requires extreme thermal management. Dow's 12 W/m·K thermal gel (#01) and Sumitomo Bakelite's 230°C Tg EMC for SiC modules (#20) set new benchmarks. Does your current material portfolio support the thermal and reliability requirements of next-generation AI accelerators and power electronics?

Opportunities vs. Threats for US/European Companies

Opportunity vs. Threat Matrix for US/European Companies



Item	Quadrant	↑ Opportunity	↓ Threat
● WACKER	Critical	EV safety stds	Competitor lag
● SUMIBE	Critical	SiC reliability	Tech gap
● CHINA	Critical	New supply	Market share
● DOW	Opp.	AI thermal	—

● PARKER	Opp.	Cost-eff EV	—
● ARKEMA	Opp.	EV materials	—
● CHINA UV	Threat	—	Price pressure
● AMMEGA	Ref.	Sustain Mfg	—

Deep Dive ① — Wacker's Ceramifying Thermal Barriers for EV

#09 | Date unknown | Wacker Chemie AG | Tech Novelty●●●●● Proximity●●●○○ Market Impact●●●●● Data Reliability●●●●○ US/EU Relevance●●●●●

Wacker Chemie's ELASTOSIL® CM series introduces flexible, thin silicone heat shields that ceramify under thermal runaway stress, forming an insulating layer to control heat, flames, and particles in EV batteries. This breakthrough enhances safety and contributes to weight reduction.

The ceramification process transforms silicone into a hard, thermally and electrically insulating layer, preventing propagation to adjacent cells. This offers greater design freedom than rigid barriers and is crucial for containing thermal runaway within the battery pack.

▶ Strategic Analyst's Perspective

Strategic Analyst's Perspective: Wacker's ceramifying silicone is a significant step towards enabling higher energy density EV batteries while meeting stringent safety regulations. The ability to form an insulating ceramic layer on-demand is a true technical novelty, offering superior protection compared to traditional materials. [Opportunity] for US/EU OEMs to integrate this into next-gen battery designs, gaining a competitive edge in safety and potentially reducing overall pack weight. [Threat] for existing thermal barrier suppliers who lack such dynamic material properties. The key technical barrier is scaling production and ensuring consistent performance across diverse battery chemistries and pack designs. Next actions: [R&D;] Evaluate ELASTOSIL® CM samples immediately for integration into future battery platforms. [Procurement] Engage Wacker to understand supply capabilities and pricing for mass production by Q4 2026. [Strategy] Assess competitive landscape for similar 'active' thermal runaway mitigation materials by end of Q3 2026.

Deep Dive ② — Sumitomo's 230°C Tg EMC for SiC Modules

#20 | 2026/06/01 | Sumitomo Bakelite Co., Ltd. | Tech Novelty●●●●● Proximity●●●●○ Market Impact●●●●● Data Reliability●●●●○ US/EU Relevance●●●●○

Sumitomo Bakelite developed the 'G785 Series' of high-Tg epoxy molding compounds (EMCs) for SiC power modules, achieving an industry-leading 230°C Tg. This material resolves the trade-off between high Tg and low stress by suppressing modulus increase, minimizing warpage, and preventing delamination.

SiC devices operate at >200°C, making packaging reliability critical. The G785 Series fundamentally addresses CTE mismatch-induced stress, enabling high-reliability packaging with excellent electrical insulation and moisture resistance for EVs and renewable energy systems.

▶ Strategic Analyst's Perspective

Strategic Analyst's Perspective: Sumitomo Bakelite's G785 Series represents a critical advancement for SiC power module reliability, a cornerstone technology for EVs and renewable energy. Achieving 230°C Tg while mitigating stress is a significant technical hurdle overcome. [Opportunity] for US/EU power electronics manufacturers to leverage this material for more robust, higher-performing SiC modules, potentially extending device lifespan and enabling higher operating temperatures. [Threat] for US/EU material suppliers who cannot match this performance, risking market share in high-growth SiC applications. The main technical barrier is ensuring long-term stability and manufacturability at scale, especially given the precision required for SiC packaging. Next actions: [R&D;] Benchmark G785 Series against current EMCs for SiC modules by Q3 2026. [Procurement] Initiate discussions with Sumitomo Bakelite for sample acquisition and technical data. [Business Dev] Explore potential licensing or partnership opportunities to integrate this technology into US/EU supply chains by Q1 2027.

Deep Dive ③ — Dow's 12 W/m·K Thermal Gel for AI/Optical

#01 | 2026/05/29 | Lightwave | Tech Novelty●●●●○ Proximity●●●●○ Market Impact●●●●○ Data Reliability●●●●○ US/EU Relevance●●●●●

Dow has launched DOWSIL TC-3120 Thermal Gel, a silicone-based TIM with 12 W/m·K conductivity, specifically for high-speed AI networking and 800G/1.6T optical modules. It minimizes oil bleeding and outgassing, crucial for sensitive components.

The gel is reworkable, maintains performance under harsh conditions, and supports accelerated curing. Its high thermal conductivity and optical-grade cleanliness address intense thermal management demands from AI workloads and next-gen optical transceivers.

▶ Strategic Analyst's Perspective

Strategic Analyst's Perspective: Dow's DOWSIL TC-3120 is a timely and impactful product, directly addressing the escalating thermal challenges in AI and high-speed optical communications. The 12 W/m·K conductivity combined with low outgassing is a strong value proposition, especially for sensitive optical components where contamination is critical. [Opportunity] for US/EU data center operators, AI hardware developers, and optical module manufacturers to immediately adopt this TIM to enhance reliability and performance of their next-gen products. [Threat] for competitors offering lower-performance TIMs or those with higher outgassing, as this sets a new bar for high-end applications. The published numbers appear realistic for a silicone gel, but long-term stability in real-world, high-power cycling environments will be key. Next actions: [Procurement] Request samples and detailed performance data for DOWSIL TC-3120 for immediate evaluation. [R&D;] Benchmark against existing TIMs for AI accelerators and 800G/1.6T optical modules by Q3 2026. [Business Dev] Explore strategic partnerships with Dow for customized TIM solutions for specific high-performance computing architectures.

Other Notable Articles

WEVO-CHEMIE Unveils WEVOSIL 23130 High-Performance Silicone Seal for Enhanced EV Battery Thermal Runaway Protection (Indian Chemical News)
Tech Novelty●●●●○ Proximity●●●●○ Market Impact●●●●○

New filler-free LSR from German firm offers robust, airtight thermal runaway protection for EV batteries.

Henkel Adhesives Innovates Advanced Semiconductor Packaging Materials for High-Performance Computing and Generative AI (Henkel Adhesives)
Tech Novelty●●●○○ Proximity●●●○○ Market Impact●●●●○

Henkel develops underfills, DAFs, EMCs, and TIMs for 2.5D/3D packaging, critical for AI/HPC chips.

PatSnap Eureka Report: Optimizing Adhesive Coverage to Reduce Cell Delamination Risks in Advanced Packaging and Flexible Displays (PatSnap Eureka)
Tech Novelty●●●○○ Proximity●●○○○ Market Impact●●●●○

Report emphasizes improved adhesives and coverage to prevent delamination in advanced packaging and flexible displays.

PatSnap Eureka Report: UV-Curable Adhesives Achieve Ultra-Fast Curing (2-3 seconds) for Accelerated Chip Embedding in Semiconductor Manufacturing (PatSnap Eureka)
Tech Novelty●●●●○ Proximity●●○○○ Market Impact●●●●○

Report highlights ultra-fast UV-curable adhesives (2-3 sec) for chip embedding, boosting semiconductor throughput.

Tecman Unveils Anti-Thermal Propagation (ATP) Pads to Prevent Thermal Runaway in Battery Energy Storage Systems (Energy-Storage.news)
Tech Novelty●●●○○ Proximity●●●●○ Market Impact●●●●○

UK firm Tecman develops ATP pads with insulating materials and spacers to prevent thermal runaway in BESS.

Recommended Actions This Week

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

Immediate (this week)

- [Executive] Review competitive intelligence on EV battery safety materials (Wacker, Parker Lord, WEVO-CHEMIE) to assess market positioning and potential disruption.
- [R&D;] Initiate internal review of current thermal interface material (TIM) performance against Dow's new 12 W/m·K gel for AI/HPC applications.
- [Procurement] Conduct a rapid assessment of critical advanced packaging material suppliers, particularly for underfills and EMCs, in light of China's accelerated development (#07).

Short-term (1 month)

- [R&D;] Obtain samples of Wacker's ELASTOSIL® CM series and Sumitomo Bakelite's G785 Series for SiC modules for preliminary testing and feasibility studies.
- [Strategy] Develop a contingency plan for sourcing advanced packaging materials, considering potential geopolitical shifts and the rise of Chinese suppliers.
- [Business Dev] Engage with EV battery OEMs and Tier 1 suppliers to understand their evolving safety requirements and evaluate opportunities for new material integration.

Medium-long term (quarter+)

- [R&D;] Invest in next-generation material science for active thermal management and advanced packaging, focusing on high-Tg, low-stress, and ultra-fast curing solutions.
- [Legal/IP] Conduct a comprehensive IP landscape analysis around ceramifying materials and advanced thermal runaway mitigation technologies to identify white spaces and potential infringement risks.
- [Strategy] Evaluate strategic partnerships or M&A; opportunities with innovative material developers in the EV battery safety and advanced semiconductor packaging domains to secure future technology access.

Adhesives_Sealants — Selected Articles

Date: 2026-06-07

Articles: 28

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#18 Henkel Adhesives Innovates Advanced Semiconductor Packaging Materials for High-Performance Computing and Generative AI

#19 Alliance Chemical Report: Advanced Talc Applications Crucial for EV Battery Thermal Management and Power Electronics Reliability

#20 Sumitomo Bakelite Develops G785 Series High-Tg Epoxy Molding Compounds with Industry-Leading 230°C Tg for Next-Gen SiC Power Modules

#21 PatSnap Eureka Report: Reducing Voiding in Chip Embedding Epoxies Critical for High-Reliability Systems in Automotive and Aerospace

#22 PatSnap Eureka Report: UV-Curable Adhesives Achieve Ultra-Fast Curing (2-3 seconds) for Accelerated Chip Embedding in Semiconductor Manufacturing

#23 Brilliant Polymers Showcases Energy-Efficient, VOC-Free Solvent-Free Adhesives for Flexible Packaging at Interpack

#24 DalFort Capital Partners Closes Second Fund at $166 Million, Exceeding Hard Cap; Successfully Sells Polymer Adhesives Holdings

#25 ResearchGate Paper: Semi-Interpenetrating Organogel OPSA with Reversible Hydrogen Bonding Developed for Dynamic Optical Devices

#26 Fengling New Materials: Expert Manufacturer of UV-Curable Adhesives for Electronics, Medical, and Optical Industries

#27 Siegwerk Launches Cirkit Novaseal Heat Seal Lacquer Portfolio Integrating Circular Economy Strategy for Fiber-Based and Flexible Packaging

#28 Henkel and Hans Claussen to Showcase LOCTITE® Adhesives, Sealants, and Coatings for Demanding Marine Applications at Nor-Fishing 2026

Dow Launches DOWSIL TC-3120 Thermal Gel with 12 W/m·K Conductivity for AI Networking and 800G/1.6T Optical Modules

Published May 29, 2026 Lightwave USA

OVERVIEW

Dow has introduced DOWSIL TC-3120 Thermal Gel, a new silicone-based thermal interface material (TIM) designed for high-speed networking equipment, optical modules, and other electronics facing intense thermal-management demands from AI workloads. This material features a high thermal conductivity of approximately 12 W/m·K and is engineered to minimize oil bleeding and outgassing, thereby enhancing the reliability of sensitive optical and electronic components. It is reworkable and maintains consistent performance under harsh environmental conditions.

IN DEPTH

Key Findings

Dow has unveiled DOWSIL TC-3120 Thermal Gel, a groundbreaking silicone-based thermal interface material (TIM) that achieves a thermal conductivity of 12 W/m·K. This innovative product is specifically engineered to meet the escalating thermal management requirements of high-speed networking equipment, 800G/1.6T optical modules, and other advanced electronics driven by demanding AI workloads. Its core benefit lies in significantly reducing oil bleeding and outgassing, which are critical for enhancing the long-term reliability of sensitive optical and electronic components.

Technical / Clinical Details

The DOWSIL TC-3120 Thermal Gel offers an approximate thermal conductivity of 12 W/m·K, placing it at the forefront of TIM performance. Crucially, its formulation minimizes oil bleed and condensed outgassing, ensuring optical-grade cleanliness around sensitive components such such as photodiodes and optical fibers, where contamination can severely impair performance. Supplied as a flowable paste, it is easy to apply and reworkable, providing manufacturing flexibility. The material is designed to deliver stable performance across a wide range of challenging environmental conditions, including high temperatures, humidity, vibration, and repeated thermal cycling. Its strong adhesion properties also allow it to fill large gaps effectively, and it supports accelerated curing for optimized production efficiency.

Background & Context

The exponential growth of AI, machine learning, and high-performance computing has led to a dramatic increase in heat generation within electronic and optical devices. Traditional thermal management solutions often struggle to efficiently dissipate this heat while maintaining component integrity and preventing degradation over time. The demand for next-generation optical transceivers, particularly those operating at 800G and 1.6T speeds, requires TIMs that not only offer superior thermal performance but also ensure a pristine operating environment. DOWSIL TC-3120 addresses these unmet needs, providing a robust solution for the evolving landscape of high-density electronics and data center infrastructure.

Strategic Significance & Outlook

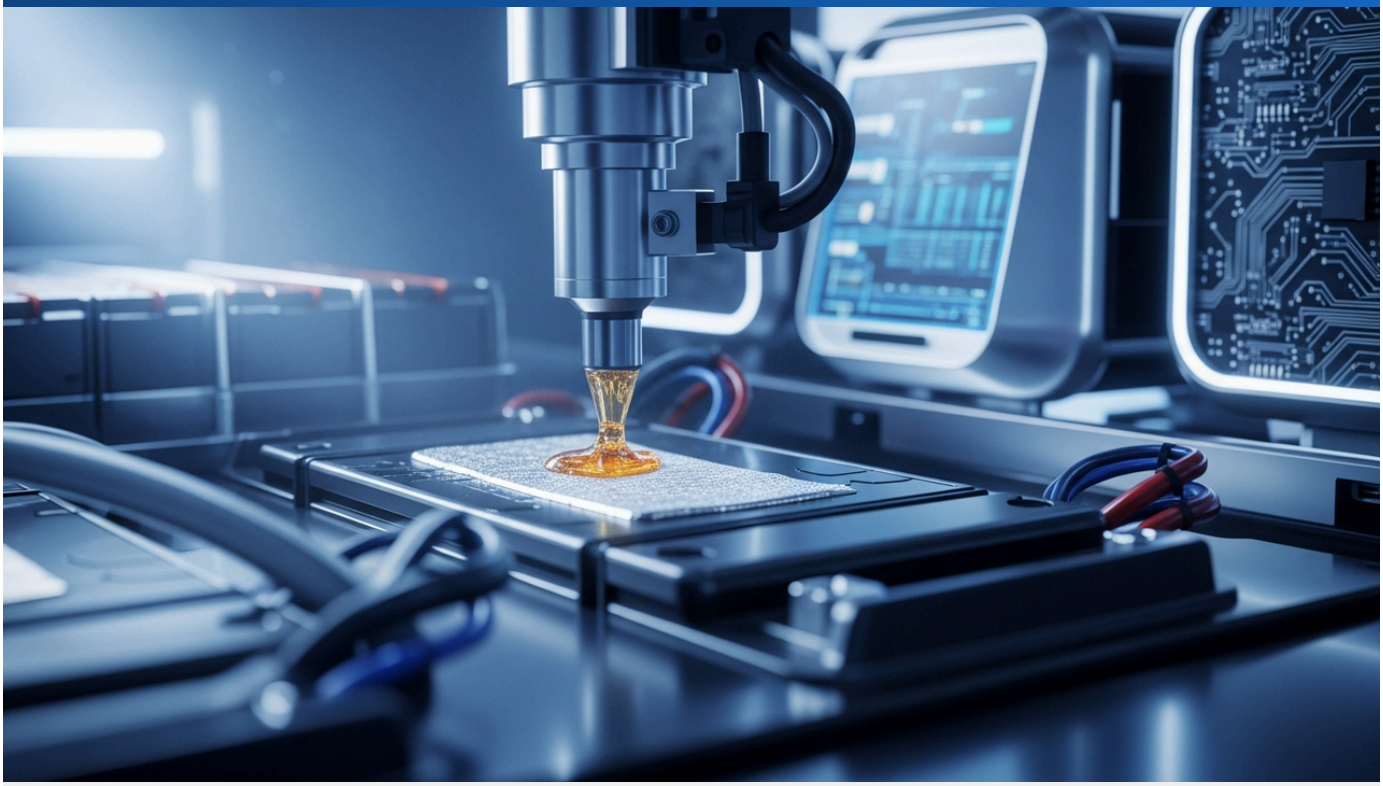
The introduction of DOWSIL TC-3120 Thermal Gel marks a significant advancement in thermal management for the electronics industry. This material is poised to become a critical enabler for the development of more powerful, reliable, and compact AI accelerators, optical communication systems, and high-performance computing platforms. By effectively mitigating thermal challenges, it will allow designers to push the boundaries of device performance and density without compromising longevity. Its low outgassing characteristics also align with the industry's increasing focus on long-term reliability and environmental stability, making it a key component in the next generation of advanced electronic and optical systems globally.

Source: https://thedatacenterengineer.com/news/dow-launches-12-w-m%C2%B7k-thermal-gel-for-800g-1-6t-optical-modules/

Collected: June 05, 2026 | Automated Research System (Gemini API)

PatSnap Eureka Report: Advanced Adhesive Formulations Critical for Preventing Thermal Runaway in EV and Energy Storage Systems

Published May 29, 2026 PatSnap Eureka Global



OVERVIEW

A new PatSnap Eureka report highlights the essential role of advanced adhesive formulations in preventing or mitigating thermal runaway in energy storage systems. Research focuses on developing materials with enhanced thermal conductivity, improved temperature stability, and inherent flame-retardant properties to facilitate heat dissipation and maintain structural integrity during thermal events. Current adhesives often lack sufficient thermal conductivity and stability at high temperatures, which can exacerbate thermal runaway.

IN DEPTH

Key Findings

A recent PatSnap Eureka report underscores the critical importance of advanced adhesive formulations for effectively preventing or mitigating thermal runaway phenomena in electric vehicle (EV) and grid-scale energy storage systems. The research emphasizes the development of materials with significantly enhanced thermal conductivity, improved temperature stability, and inherent flame-retardant characteristics.

Technical / Clinical Details

Advanced adhesive formulations aim to improve thermal conductivity through optimized filler technology, facilitating efficient heat transfer from cells to cooling systems. The goal is to achieve thermal conductivity values exceeding 3 W/mK by uniformly dispersing high-thermal-conductivity materials, such as ceramic fillers (e.g., boron nitride, alumina) or graphite, within a polymer matrix. To withstand the extreme temperatures during a thermal runaway event, adhesives with superior temperature stability are being developed, often utilizing silicones or specific modified epoxy resins. Furthermore, the incorporation of halogen-free flame retardants helps to suppress flame propagation, thereby enhancing overall safety. While existing adhesives often fall short in thermal conductivity and high-temperature stability, potentially accelerating thermal runaway, these new formulations are designed to maintain cell isolation, preserve gas venting pathways, and uphold structural integrity.

Background & Context

With the increasing adoption of EVs and large-scale energy storage systems, battery safety, particularly the prevention of thermal runaway, has become a paramount concern for the industry. Thermal runaway, a chain reaction of uncontrolled heat generation within a battery, can lead to severe incidents like fire and explosion. Traditional approaches have primarily focused on physical barriers and cooling systems, but the crucial structural and thermal roles played by adhesives are now being re-evaluated. Adhesives are expected to secure cells, conduct heat, and act as a protective layer during thermal events, driving strong demand for performance enhancements.

Strategic Significance & Outlook

Advanced adhesive formulations for thermal runaway prevention hold the potential to revolutionize battery design and safety regulations. Adhesives with superior thermal conductivity, temperature stability, and flame retardancy are key to increasing the energy density of EV battery packs while maintaining safety. Moving forward, these technologies are expected to contribute to longer battery lifespans, improved reliability, and reduced manufacturing costs, accelerating the adoption of sustainable energy solutions. Research and development efforts will likely continue to focus on even higher-performance materials and solutions for integration into complex battery architectures.

Source: https://eureka.patsnap.com/report-how-to-prevent-thermal-runaway-with-improved-adhesive-formulations

Collected: June 05, 2026 | Automated Research System (Gemini API)

Arkema Unveils Next-Gen Material Solutions for EV Batteries at Battery Show Europe 2026, Enhancing Adhesion, Energy Density, and Recyclability

Published June 01, 2026 Arkema France

OVERVIEW

Arkema showcased integrated material solutions for EV and energy storage system battery packs at The Battery Show Europe 2026, focusing on improved adhesion, energy density, safety, and recyclability. Key innovations include new PVDF grades like Kynar® HSV 1200 and HSV 1400 for LFP batteries, and the Incellion™ family for silicon-based anodes and separator coatings. Additionally, Bostik presented advanced structural adhesives, thermal interface materials, fast-curing UV resins, and debond-on-demand technologies to address battery assembly challenges.

IN DEPTH

Key Findings

Arkema, along with its subsidiary Bostik, unveiled a comprehensive suite of integrated material solutions for electric vehicle (EV) and energy storage system (ESS) battery packs at The Battery Show Europe 2026. The innovations aim to significantly enhance adhesion, energy density, safety, and recyclability, with a particular focus on novel PVDF grades and advanced bonding and sealing technologies for battery assembly.

Technical / Clinical Details

Arkema introduced new PVDF grades, Kynar® HSV 1200 and HSV 1400, specifically designed to improve adhesion and energy density in Lithium Iron Phosphate (LFP) batteries, serving as high-performance cathode binders. The evolving Incellion™ product family for silicon-based anodes and separator coatings further contributes to enhanced battery performance and cycle life. For thermal management, Zenimid™ polyimides offer superior thermal resistance and dielectric strength, while Kynar Flex® PVDF is utilized for battery separator coatings. Bostik showcased advanced sealing and structural adhesive solutions for battery assembly, including fast-curing UV resins, high-efficiency Thermal Interface Materials (TIMs), and 'debond-on-demand' technologies critical for future battery recyclability. These solutions are engineered to address complex challenges in battery cell integration, thermal management, and automated assembly processes.

Background & Context

The rapid growth of the EV and ESS markets necessitates battery materials with higher performance, enhanced safety, and improved sustainability. Key industry challenges include increasing energy density, preventing thermal runaway, and optimizing manufacturing efficiency. Emerging regulations, such as the EU Battery Regulation 2023/1542, place significant emphasis on lifecycle safety assessments and robust adhesive performance, making improved recyclability a pressing concern. Arkema's and Bostik's integrated approach directly addresses these multifaceted demands, pushing the boundaries of battery design and supporting a sustainable future for mobility.

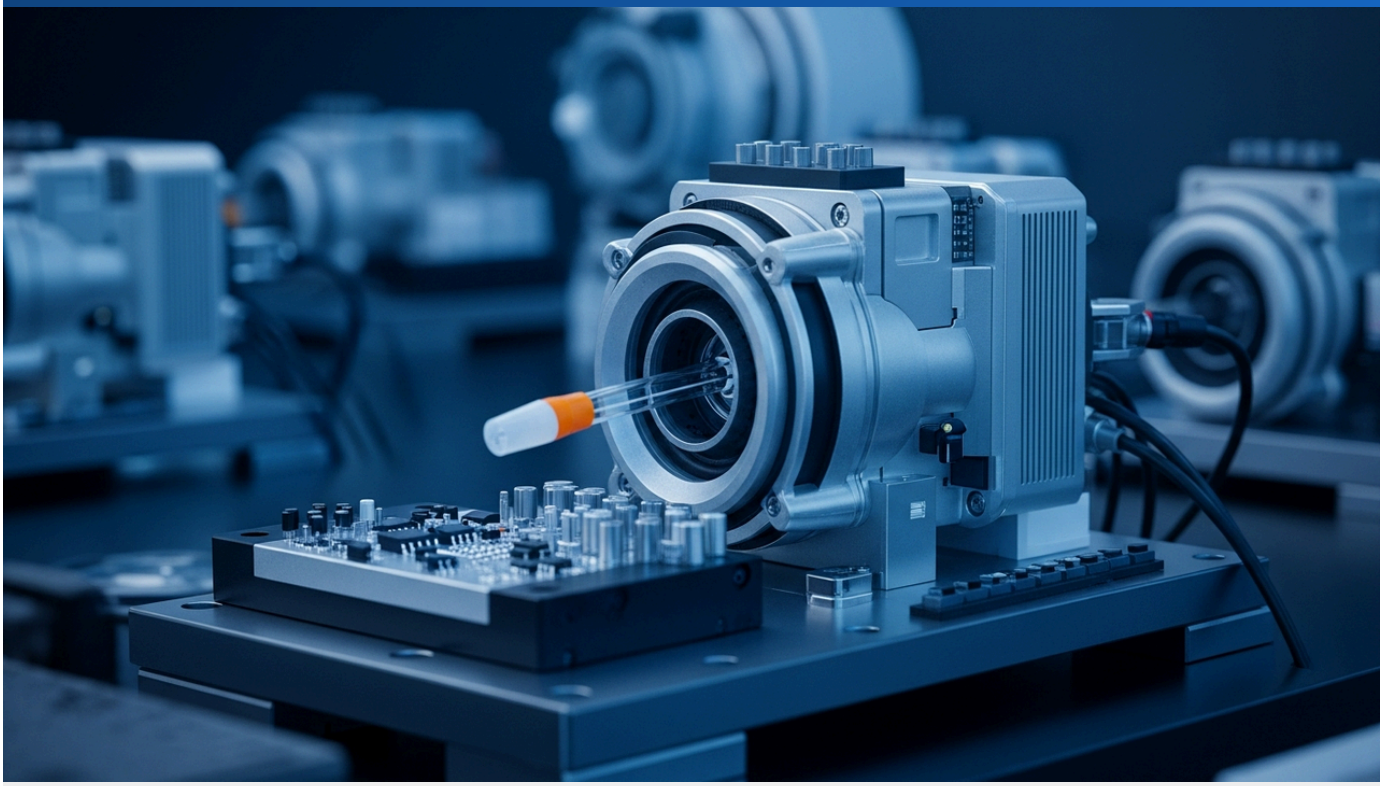
Strategic Significance & Outlook

Arkema’s next-generation battery material solutions are poised to significantly improve the performance and safety of EVs and ESS. The new PVDF grades supporting LFP battery evolution and the Incellion™ family accelerating silicon anode technology are particularly impactful for key growth segments. Furthermore, the 'debond-on-demand' technologies are expected to simplify future battery recycling processes, facilitating the transition towards a circular economy. These innovations are anticipated to drive overall advancements in battery technology, providing essential foundations for the realization of a sustainable energy society globally.

Source: https://www.arkema.com/global/en/media/newslist/news/global/products/2026/20260601-battery-show-europe/

QinanX New Material Offers Fast-Curing, High-Clarity, Low-Shrinkage UV-Curable Adhesives for Electronics, Optics, and Medical Industries

Published Date unknown QinanX New Material China



OVERVIEW

QinanX New Material provides UV-curable adhesives that cure in seconds under UV light for a wide range of applications, including electronics, optical lenses, displays, medical devices, and glass/plastic bonding. These adhesives feature strong adhesion, high clarity for optical uses, excellent chemical and heat resistance, and are solvent-free with low shrinkage. Meeting environmental certifications like RoHS and REACH, some formulations also offer reworkability, enhancing manufacturing flexibility.

IN DEPTH

Key Findings

QinanX New Material is offering a portfolio of high-performance UV-curable adhesives characterized by rapid curing, high transparency, and low shrinkage. These adhesives are designed for diverse industrial applications including electronic components, optical lenses, displays, medical devices, and glass/plastic bonding, significantly improving production efficiency and product reliability compared to traditional bonding methods.

Technical / Clinical Details

QinanX's UV-curable adhesives cure rapidly, often within seconds, when exposed to specific wavelengths of ultraviolet (UV) light. This fast-curing property is crucial for reducing production cycle times and increasing manufacturing throughput. The adhesives exhibit strong adhesion to various substrates such as glass, plastics, metals, and ceramics, ensuring high reliability. For optical applications, they boast high light transmittance (over 99%) and low yellowing, maintaining superior optical performance. The low shrinkage after curing ensures dimensional stability of precision components, mitigating the risk of deformation or failure due due to internal stress. Furthermore, these adhesives offer excellent chemical and heat resistance, maintaining stable performance under harsh environmental conditions. They comply with environmental regulations such as RoHS and REACH and are solvent-free, contributing to worker safety and reduced environmental impact. Certain specialized formulations also provide reworkability, allowing for component repositioning or replacement if needed.

Background & Context

Modern electronics, medical devices, and optical industries demand miniaturization, high precision, and rapid production. Traditional thermosetting or solvent-based adhesives often present challenges, such as long curing times or the emission of harmful volatile organic compounds (VOCs), making them less suitable for these evolving requirements. UV-curable adhesives have emerged as a leading choice for bonding technology in these industries due to their instant curing capabilities and environmental compatibility. QinanX New Material has developed innovative UV-curing technologies to meet these market needs, offering diverse high-functional adhesive solutions.

Strategic Significance & Outlook

The UV-curable adhesives offered by QinanX New Material are poised to become foundational technologies driving further innovation in the high-performance electronics, optics, and medical sectors. Applications are anticipated in next-generation products demanding compact and high-precision components, such as 5G communication devices, AR/VR headsets, and wearable medical devices. The company aims to strengthen its market competitiveness and accelerate growth by focusing on continuous R&D to provide custom formulations tailored to specific application requirements and developing even faster, more energy-efficient curing systems.

Source: https://qinanxgroup.com/polyacrylate-adhesive/uv-curable-adhesive/

Collected: June 05, 2026 | Automated Research System (Gemini API)

PatSnap Eureka Report: Optimizing Adhesive Coverage to Reduce Cell Delamination Risks in Advanced Packaging and Flexible Displays

Published May 29, 2026 PatSnap Eureka Global

OVERVIEW

A PatSnap Eureka report highlights the critical need for improved adhesive technologies and optimized coverage to prevent cell delamination in advanced semiconductor packaging and flexible display sectors. Research focuses on developing adhesives with enhanced flow characteristics, improved substrate compatibility, and environmental resistance, often integrating conductive fillers and thermal interface materials. This advancement is crucial for ensuring the reliability of increasingly thin and dense devices.

IN DEPTH

Key Findings

A recent PatSnap Eureka report emphasizes the indispensable role of advanced adhesive technologies and optimized coverage in mitigating cell delamination risks within the semiconductor packaging and display technology sectors. As advanced packaging and flexible displays become thinner and more dense, adhesive performance emerges as a critical determinant of long-term device reliability.

Technical / Clinical Details

The research focuses on improving the flow characteristics of adhesives to ensure uniform application, even over intricate geometries and into micro-gaps, thereby minimizing void formation. This ensures the integrity of the adhesive interface and reduces the risk of delamination. Efforts are also directed at enhancing substrate compatibility to maximize adhesion between dissimilar materials, which is crucial for advanced packaging utilizing diverse materials like polyimide, glass, and metals. Furthermore, developing environmental resistance—including thermal stability and moisture resistance—to maintain adhesive performance under harsh conditions such such as high temperatures, humidity, thermal cycling, and mechanical stress, is a key area of development. Many new adhesive formulations integrate conductive fillers (e.g., silver, carbon nanotubes) or thermal interface materials (TIMs) to provide efficient heat dissipation and improved electrical performance, positioning adhesives as functional materials beyond mere bonding agents.

Background & Context

The semiconductor industry is shifting towards advanced packaging technologies like Fan-Out Wafer-Level Packaging (FOWLP) and 2.5D/3D packaging to achieve higher density and performance, as Moore's Law approaches its physical limits. Simultaneously, the proliferation of flexible displays and wearable devices drives demand for thin, bendable displays. These technologies necessitate more complex structures and diverse material combinations than conventional packaging, demanding unprecedented reliability and performance from adhesives. Cell delamination directly leads to device malfunction and shortened lifespan, making its prevention a paramount challenge.Strategic Significance & Outlook

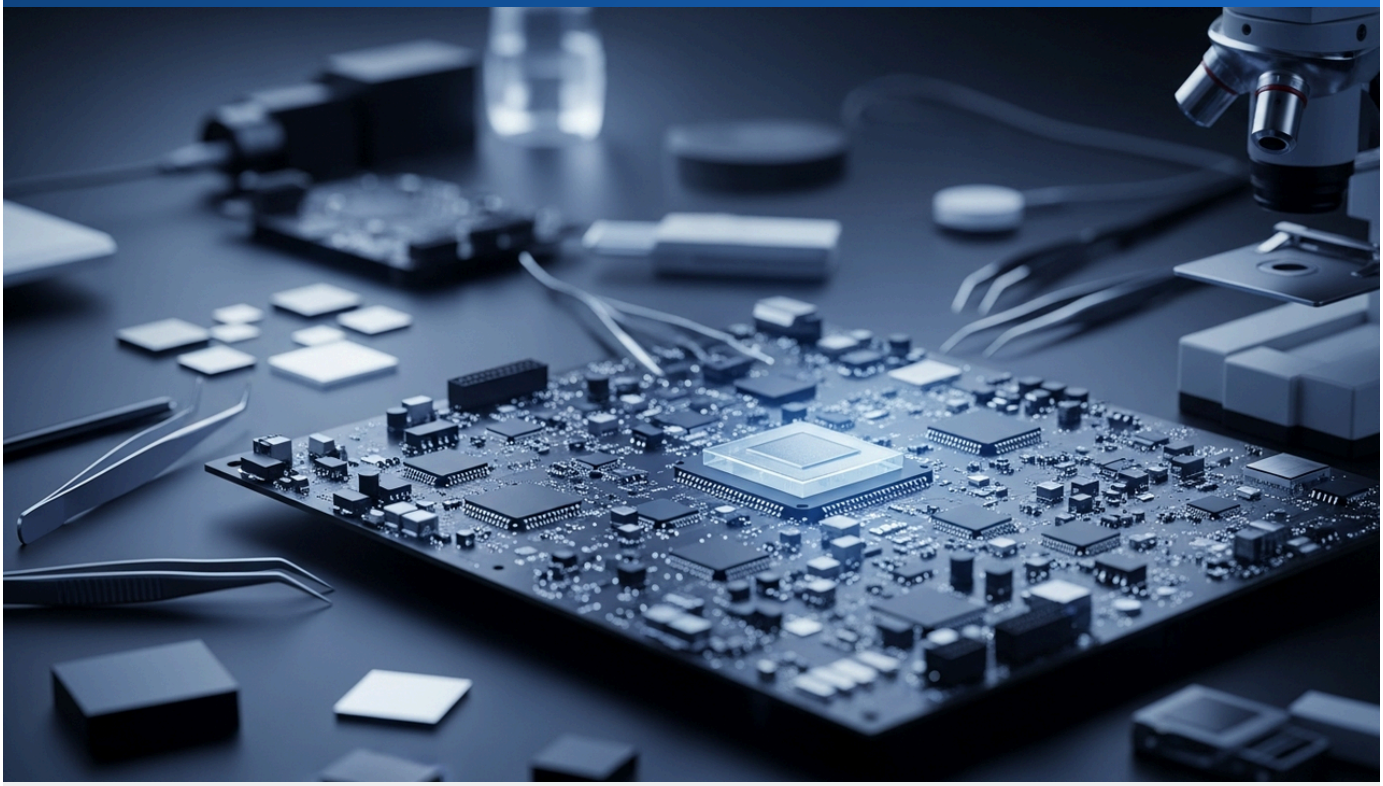
Advances in adhesive technology and coverage optimization are essential for the development of next-generation products in advanced packaging and flexible displays. These advancements will enable the creation of smaller, higher-performing, and more reliable electronic devices, accelerating innovations in AI chips, high-speed computing, and foldable smartphones. Moving forward, adhesive manufacturers and device makers are expected to further strengthen collaboration between material science and process technology, focusing on developing more sustainable and high-performance adhesive solutions that resist delamination even under extreme conditions.

Source: https://eureka.patsnap.com/report-optimizing-adhesive-coverage-to-reduce-cell-delamination-risks

Collected: June 05, 2026 | Automated Research System (Gemini API)

T-Global Technology Launches TG-AD30D, a Low-Outgassing Thermal Pad with 3.0 W/m·K Conductivity for High-Reliability Electronics

Published June 03, 2026 T-Global Technology Taiwan



OVERVIEW

T-Global Technology has introduced the TG-AD30D, an advanced low-outgassing thermal pad designed for high-reliability electronics and sensitive environments. This hybrid thermal pad offers 3.0 W/m·K thermal conductivity, low thermal impedance, and excellent electrical insulation. Optimized for high-power applications requiring efficient heat transfer with minimal outgassing, it meets ATSM E595 standards for aerospace, AI infrastructure, datacom, and automotive electronics, ensuring long-term performance and reliability.

IN DEPTH

Key Findings

T-Global Technology has launched TG-AD30D, an advanced low-outgassing thermal pad offering 3.0 W/m·K thermal conductivity, specifically engineered for high-reliability electronics and sensitive environments. This product is designed to ensure efficient heat transfer with minimal outgassing, thus preserving the long-term performance and integrity of precision electronic components.

Technical / Clinical Details

The TG-AD30D thermal pad is developed using hybrid material technology, featuring a stable thermal conductivity of 3.0 W/m·K and low thermal impedance. These properties enable efficient heat dissipation from heat sources to heat sinks, preventing component overheating. A key characteristic is its 'low outgassing' property, which complies with ATSM E595 standards. This means it releases minimal volatile components, significantly reducing the risk of condensation or contamination failures in sealed environments and around sensitive optical and electronic parts. Furthermore, its excellent electrical insulation properties prevent short circuits within complex electronic systems, enhancing overall safety. The pad's flexibility allows it to conform easily to various surface geometries, making it adaptable for diverse applications.

Background & Context

In high-performance sectors such as AI, data communications, and automotive electronics, the miniaturization of devices coupled with increased heat generation poses a significant challenge. Particularly in aerospace and precision instruments, outgassing can contaminate optical lenses and sensors, leading to performance degradation and failure, making low-outgassing materials essential. Traditional thermal interface materials often either excelled in thermal conductivity but lacked sufficient low-outgassing properties, or vice versa. The TG-AD30D was developed to overcome these challenges, delivering both high performance and high reliability.

Strategic Significance & Outlook

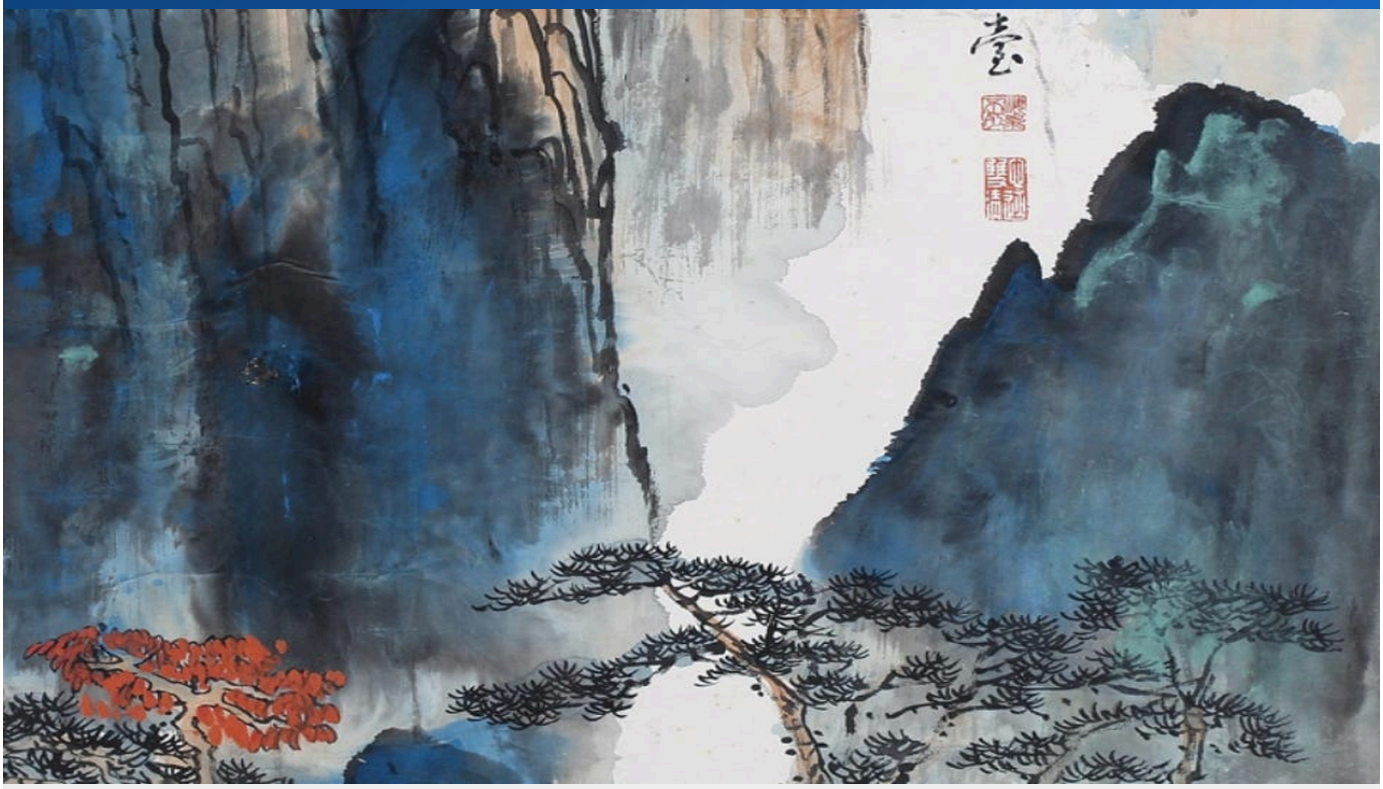
T-Global Technology's TG-AD30D holds the potential to set a new standard for thermal management solutions in next-generation aerospace systems, AI infrastructure, data centers, and high-reliability automotive electronics. Its low-outgassing characteristic will be indispensable for precision equipment used in cleanroom environments or outer space. Through this product, T-Global Technology is expected to support the evolution of high-power and sensitive electronic devices, contributing to the realization of safer and higher-performing systems. Future research and development are anticipated to further enhance thermal conductivity and reduce outgassing.

Source: https://www.tglobaltechnology.com/2026/06/03/low-outgassing-thermal-pad-launched/

Collected: June 05, 2026 | Automated Research System (Gemini API)

SemiMedia Reports China Accelerating Global Catch-Up in Advanced Packaging Materials for AI and HPC

Published June 05, 2026 SemiMedia China



OVERVIEW

A SemiMedia report indicates that China is accelerating its global catch-up in advanced packaging materials, driven by the demand for AI chips and high-performance computing (HPC). The focus is on developing high-performance resins, dielectric materials, underfill, epoxy molding compounds, and thermal interface materials. Chinese companies are actively seeking breakthroughs in areas like photosensitive polyimide and CMP materials to meet the needs of chiplet and 2.5D/3D packaging technologies.

IN DEPTH

Key Findings

According to a recent SemiMedia report, 'Inside China's Semiconductor Materials Catch-Up,' China is rapidly advancing its capabilities in advanced semiconductor packaging materials, driven by the explosive demand from Artificial Intelligence (AI) chips and High-Performance Computing (HPC). The nation is particularly focusing its efforts on developing high-performance resins, dielectric materials, underfill, epoxy molding compounds (EMCs), and thermal interface materials (TIMs).

Technical / Clinical Details

Chinese companies are aggressively pursuing localization and performance enhancements in material technologies to support next-generation advanced packaging architectures such as chiplet technology and 2.5D/3D packaging. Specifically, innovations are underway in high-performance resins for thinner, denser packaging, low-dielectric constant materials for signal integrity, underfill materials to mitigate stress between die and substrate and improve reliability, EMCs for physical device protection, and TIMs for efficient thermal management. These materials are critical for addressing the high operating temperatures, power densities, and miniaturization challenges faced by AI and HPC devices. China aims for breakthroughs in key semiconductor process areas like photosensitive polyimide and Chemical Mechanical Planarization (CMP) materials, with some domestic companies already offering products that rival or even surpass international standards.

Background & Context

Advanced packaging has become a crucial strategy in the semiconductor industry to overcome the limitations of Moore's Law. The evolution of AI and HPC, in particular, has increased chip design complexity, creating performance and reliability demands that traditional packaging technologies cannot meet. Under its national strategy for semiconductor self-sufficiency, China is intensely focused on resolving material bottlenecks. This effort aims to stabilize material supply in the global supply chain and strengthen the domestic semiconductor semiconductor ecosystem.

Strategic Significance & Outlook

China's rapid progress in advanced packaging materials is likely to have a substantial impact on the global semiconductor supply chain. The enhancement of domestic material supply capabilities and technological levels will shift the competitive landscape in international markets, prompting multinational corporations to reconsider their collaboration and competitive strategies. Moving forward, China is expected to leverage these material advancements to drive further performance improvements and mass production of AI chips and HPC devices, playing an increasingly vital role in global technological innovation. Sustainable material development and compliance with environmental regulations will also be important directions for future R&D.

Source: https://leonliao.substack.com/p/inside-chinas-semiconductor-materials

Collected: June 05, 2026 | Automated Research System (Gemini API)

Beckers Group Inaugurates New Renewable Resin Manufacturing Plant in India, Bolstering Sustainable Coatings Supply

Published June 05, 2026 Coatings World India

OVERVIEW

Beckers Group, through its JV Berger-Becker Coatings, opened a new renewable resin manufacturing plant in Nagpur, India, on May 28, 2026. This facility will produce renewable and recycled-content polyester resins for industrial market segments, including coatings, adhesives, sealants, and elastomers. The initiative aims to enhance supply chain resilience and promote sustainable coating technologies, meeting growing environmental demands.

IN DEPTH

Key Findings

Beckers Group, through its joint venture Berger-Becker Coatings, has inaugurated a new manufacturing plant for renewable resins in Nagpur, India. This state-of-the-art facility is designed to produce renewable and recycled-content polyester resins, serving a broad spectrum of industrial markets including coatings, adhesives, sealants, and elastomers, thereby bolstering the supply of sustainable coating materials globally.

Technical / Clinical Details

The new plant, which commenced operations on May 28, 2026, specializes in the production of high-performance polyester resins for industrial applications. These resins are formulated with a significant proportion of bio-based and recycled raw materials, leading to a substantial reduction in the environmental footprint compared to conventional petroleum-derived resins. The manufacturing process adheres to the latest technological standards and stringent quality control protocols, ensuring high product consistency and reliability. The produced resins are expected to offer superior durability, weather resistance, and adhesive properties, contributing to enhanced performance in various end products.

Background & Context

Amid rising global environmental awareness, the manufacturing industry is rapidly transitioning towards sustainable materials. In the chemical sector, particularly for paints, adhesives, and sealants, the utilization of renewable resources and increased recycled content are becoming critical factors for corporate competitiveness and brand value. Beckers Group's strategic investment in India is a direct response to the escalating demand for sustainable materials in the Asian market. India represents a rapidly growing market where a local production base can enhance supply chain flexibility and allow for agile responses to region-specific needs.

Strategic Significance & Outlook

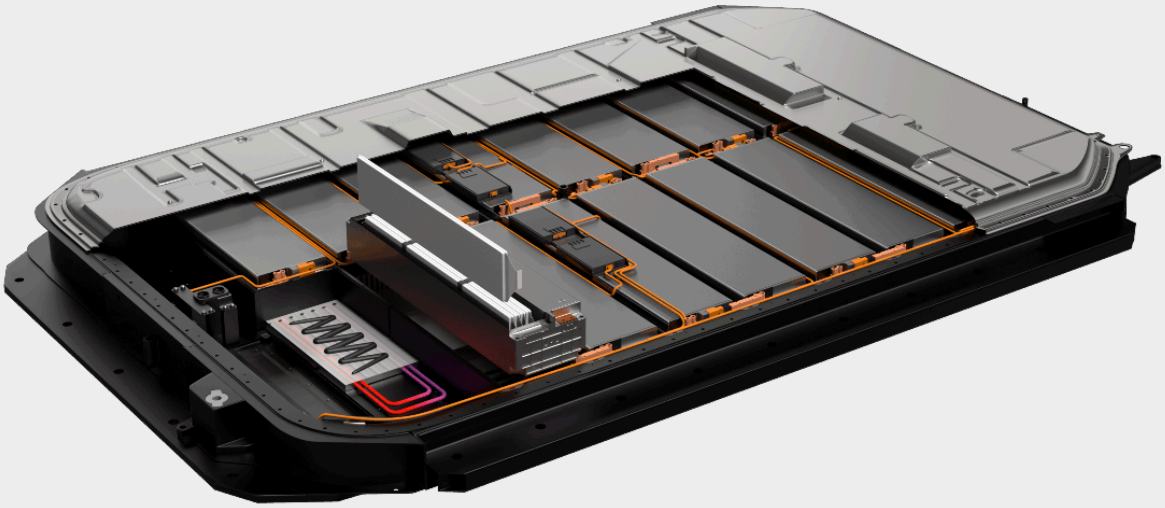
The opening of the new plant in India marks a significant step in Beckers Group's commitment to sustainability and its strategy to strengthen global market leadership. The renewable resins supplied from this facility will enable the development of more environmentally friendly products, driving sustainable transformation across the industrial sector. The company plans to continue investing in research and development of sustainable solutions, aiming to help customers achieve their environmental goals and contribute to the establishment of a circular economy. Further business expansion in the Asian market is also envisioned as part of this long-term strategy.

Source: https://www.coatingsworld.com/breaking-news/beckers-group-through-its-jv-berger-becker-establishes-new-renewable-resin-manufacturing-plant-in-india/

Collected: June 05, 2026 | Automated Research System (Gemini API)

Wacker Chemie Unveils ELASTOSIL® CM Series: Ceramifying Thermal Barriers for Enhanced EV Battery Safety During Thermal Runaway

Published Date unknown Wacker Chemie AG Germany



OVERVIEW

Wacker Chemie AG will showcase its ELASTOSIL® CM series at The Battery Show Europe 2026, presenting innovative silicone technologies to significantly enhance EV battery safety. This series offers flexible, thin, and highly stable heat shields that ceramify under thermal runaway stress to form an insulating layer, effectively controlling heat, flames, and particles. The solution aims to improve battery safety and thermal management while contributing to weight reduction in electric vehicles.

IN DEPTH

Key Findings

Wacker Chemie AG is set to debut its groundbreaking ELASTOSIL® CM series at The Battery Show Europe 2026, a revolutionary silicone technology designed to dramatically enhance the safety of electric vehicle (EV) batteries. This series introduces flexible thermal barriers that effectively control the propagation of heat, flames, and particles during a thermal runaway event, improving overall battery safety while also contributing to weight reduction.

Technical / Clinical Details

The ELASTOSIL® CM series comprises silicone elastomers that provide flexible, thin, and highly stable heat shields. The most innovative feature of these materials is their ability to 'ceramify' when exposed to extreme thermal stress during a battery cell thermal runaway. This ceramification process transforms the silicone into a hard, thermally and electrically insulating layer, effectively preventing the spread of heat and flames to adjacent cells. This mechanism is crucial for containing thermal runaway propagation within the entire battery pack, thereby safeguarding vehicle occupants. Unlike traditional rigid barriers, the flexibility of the ELASTOSIL® CM series offers greater design freedom within the battery pack and contributes to overall system weight reduction. Wacker will also present other silicone products for e-mobility applications, including TIM gap fillers and materials for battery assembly and automotive power electronics.

Background & Context

As the adoption of electric vehicles accelerates, battery safety has become a paramount concern for both consumers and regulatory bodies. Thermal runaway represents the single largest safety concern in EVs, and its prevention and propagation suppression are urgent challenges for battery manufacturers. New regulations, such as the EU Battery Regulation 2023/1542, emphasize lifecycle safety assessments and robust adhesive performance, making thermal runaway mitigation mandatory. Wacker Chemie AG leverages its extensive expertise in silicone technology to provide an innovative, material science-based solution to this industry challenge.

Strategic Significance & Outlook

The introduction of the ELASTOSIL® CM series holds the potential to establish a new standard in EV battery thermal management and safety design. This technology will be a critical factor in enabling higher energy density batteries while ensuring superior safety. As ceramifying barriers are adopted in more EV models and energy storage systems in the future, they are expected to contribute significantly to the widespread adoption of sustainable mobility. Wacker Chemie AG aims to strengthen its leadership in the e-mobility sector by continuously developing innovative silicone solutions that enhance battery performance, safety, and sustainability.

Source: https://www.wacker.com/cms/en-us/products/insights/batteryshow.html

Collected: June 05, 2026 | Automated Research System (Gemini API)

tesa Celebrates 90 Years of tesafilm® with Expansion into Sustainable Production and Introduction of tesafilm® PAPER

Published May 28, 2026 tesa Germany

OVERVIEW

tesa is celebrating the 90th anniversary of its flagship product, tesafilm®, highlighting its evolution, including the recent introduction of tesafilm® PAPER. The company is investing in plant expansion for more sustainable production, utilizing solvent-free and energy-efficient processes. This strategic move aims to integrate modern infrastructure with sustainable product solutions, reducing environmental impact and strengthening its product offerings.

IN DEPTH

Key Findings

tesa is celebrating the 90th anniversary of its iconic product, tesafilm®, marking a significant milestone in its history. The company is emphasizing the evolution of the product, particularly the recent introduction of tesafilm® PAPER, which underscores its commitment to sustainable product development and expanded sustainable production capabilities.

Technical / Clinical Details

Since its inception, tesafilm® has been renowned for its transparency, durability, and reliable adhesion, undergoing numerous refinements over the decades to cater to diverse applications. The recently launched tesafilm® PAPER offers an environmentally friendly alternative to conventional plastic tapes, utilizing a paper-based carrier material and water-based adhesive to reduce plastic consumption and improve recyclability. To support its commitment to more sustainable production, tesa is investing heavily in plant expansion, actively implementing solvent-free adhesive production processes and energy-efficient manufacturing technologies. These initiatives aim to reduce VOC (Volatile Organic Compound) emissions and minimize the overall environmental footprint of its production operations.

Background & Context

Today's consumers are increasingly conscious of not only product functionality but also its environmental impact. Sustainability is no longer just a trend but a prerequisite for companies to maintain competitiveness and gain societal trust. The adhesive tape industry is no exception, with demands rising for eco-friendly products and manufacturing processes. tesa, by combining its long-standing technological expertise with a strong sense of environmental responsibility, is addressing these new market demands. The 90th anniversary serves not only as a celebration of past successes but also as an opportunity to signal its future commitment to innovation and sustainability.

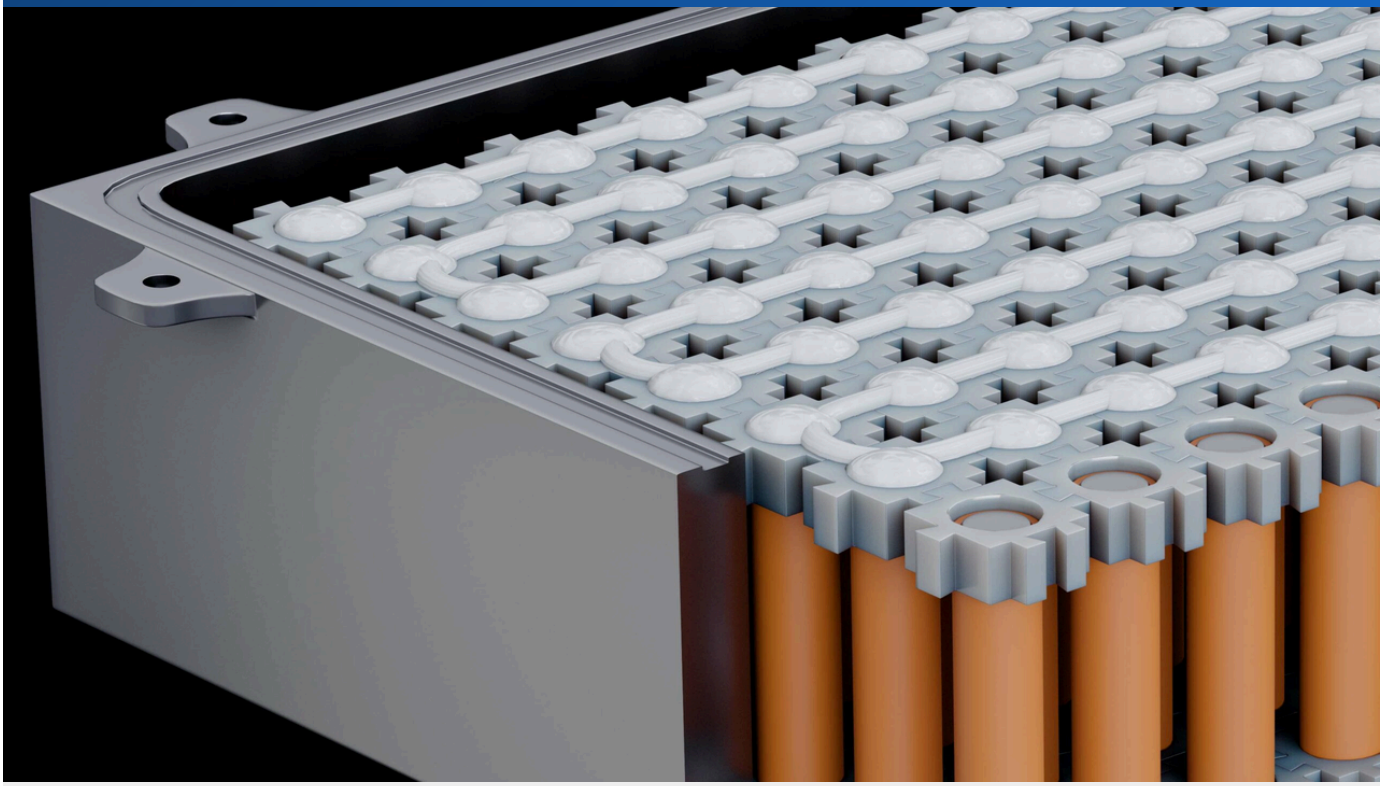
Strategic Significance & Outlook

tesa's dedication to sustainable production and product development signals a clear direction for the adhesive tape industry. The introduction of products like tesafilm® PAPER provides eco-conscious options for both consumers and corporate clients, accelerating the green transformation of the market. The company plans to continue investing in R&D, introducing more innovative products that utilize bio-based and recycled materials to offer low-environmental-impact solutions. By balancing high-quality products with sustainability, tesa is expected to maintain its leadership in the global market and contribute to the realization of a circular economy.

Source: https://www.tesa.com/en/about-tesa/press-insights/press/for-90-years-in-a-main-role-tesafilm-celebrates-a-milestone-anniversary.html

Parker Lord Develops CoolTherm SF-1000, a Low-Cost Liquid-Dispensed Solution to Mitigate Thermal Runaway Propagation in EV Cylindrical Battery Packs

Published June 03, 2026 E-Mobility Engineering USA



OVERVIEW

Parker Hannifin has introduced CoolTherm SF-1000, a liquid-dispensed silicone foam material designed to mitigate thermal runaway propagation in cylindrical lithium-ion cell battery packs. This non-expanding material functions as a fire blanket and can replace die-cut mica sheets, offering a lower-cost alternative without compromising safety or processing efficiency. It simplifies manufacturing processes while enhancing battery safety and is part of Parker's broader portfolio of advanced materials for battery safety, thermal management, and assembly.

IN DEPTH

Key Findings

Parker Hannifin has unveiled CoolTherm SF-1000, a novel silicone foam material designed to significantly improve battery safety in cylindrical lithium-ion cell packs for electric vehicles (EVs). This liquid-dispensed, non-expanding solution effectively mitigates thermal runaway propagation, streamlining manufacturing processes and reducing system-level costs while enhancing overall safety.

Technical / Clinical Details

CoolTherm SF-1000 functions as a localized 'fire blanket' to prevent the spread of thermal runaway from an affected cell to adjacent cells within the battery pack. Applied as a liquid, it cures to form a robust barrier layer that provides both thermal insulation and physical protection. This material offers a compelling alternative to traditional rigid barriers, such as die-cut mica sheets, by allowing for automated, precise dispensing. This approach is expected to reduce manual labor in manufacturing, minimize component count and complexity, and improve production efficiency. Its non-expanding nature ensures that it does not create additional volumetric expansion during a thermal event, maintaining the design stability of the battery pack. Parker positions CoolTherm SF-1000 as a key component within its portfolio of advanced materials for battery safety, thermal management, and assembly.

Background & Context

With the rapid growth of the EV market, battery pack safety remains one of the foremost challenges. Thermal runaway propagation, in particular, poses a significant risk of severe incidents, making its prevention a top priority for manufacturers. Regulatory developments, such as the EU Battery Regulation 2023/1542, are also mandating enhanced thermal runaway mitigation strategies. While conventional solutions are effective, they often involve complex designs and high manufacturing costs. CoolTherm SF-1000 addresses these challenges by offering an innovative approach that balances performance and cost-efficiency while elevating battery safety.

Strategic Significance & Outlook

The introduction of CoolTherm SF-1000 holds the potential to revolutionize EV battery design and manufacturing processes. This material is anticipated to find applications not only in cylindrical cell battery packs but also in other cell formats (e.g., pouch, prismatic), contributing to overall EV safety improvements. In the future, it is expected to enable the development of higher energy density and safer battery packs, further accelerating the adoption of electric vehicles. Through this innovative technology, Parker Hannifin aims to strengthen its leadership in the e-mobility market and contribute to building sustainable and safe transportation systems.

Source: https://www.emobility-engineering.com/parker-cooltherm-ev-expo-stuttgart/

Collected: June 05, 2026 | Automated Research System (Gemini API)

Tecman Unveils Anti-Thermal Propagation (ATP) Pads to Prevent Thermal Runaway in Battery Energy Storage Systems

Published June 03, 2026 Energy-Storage.news UK

OVERVIEW

Tecman has developed anti-thermal propagation (ATP) pads, including framed and encapsulated versions, as cell barriers to prevent thermal runaway propagation in battery energy storage systems (BESS). These pads utilize thermally insulating materials and a physical spacer layer to accommodate cell expansion while preventing heat transfer between cells. Adhesives tapes are used for secure bonding during assembly, significantly enhancing overall BESS safety.

IN DEPTH

Key Findings

Tecman has developed innovative Anti-Thermal Propagation (ATP) pads, available in framed and encapsulated versions, designed to serve as cell barriers to effectively prevent thermal runaway propagation in Battery Energy Storage Systems (BESS). These pads significantly enhance the safety of BESS installations by allowing for cell expansion while crucially preventing heat transfer between adjacent cells.

Technical / Clinical Details

Tecman's ATP pads employ a multi-layered structure combining advanced thermally insulating materials with a physical spacer layer. The thermally insulating component provides excellent insulation, slowing down or entirely blocking the transfer of high-temperature energy from a thermal runaway cell to its neighbors. The physical spacer layer is engineered to accommodate the volumetric expansion of cells during a thermal runaway event, preventing mechanical stress and potential damage to the battery package. This design maintains the structural integrity between cells and ensures gas venting pathways remain clear. The pads are securely bonded to cells during the assembly process using adhesive tapes, ensuring stable and consistent performance. This robust design effectively prevents a single cell failure from escalating into a catastrophic chain reaction affecting the entire system.

Background & Context

Battery Energy Storage Systems are vital for integrating renewable energy and stabilizing grids, but the risk of thermal runaway remains a primary concern for their broader adoption. In large-scale BESS facilities, a thermal runaway incident in one cell can rapidly propagate, leading to devastating fires. Consequently, preventing thermal runaway propagation is an urgent issue from both industry standards and regulatory perspectives. Tecman’s ATP pads offer a cost-effective and practical solution to this challenge, supporting the safe operation of BESS installations.

Strategic Significance & Outlook

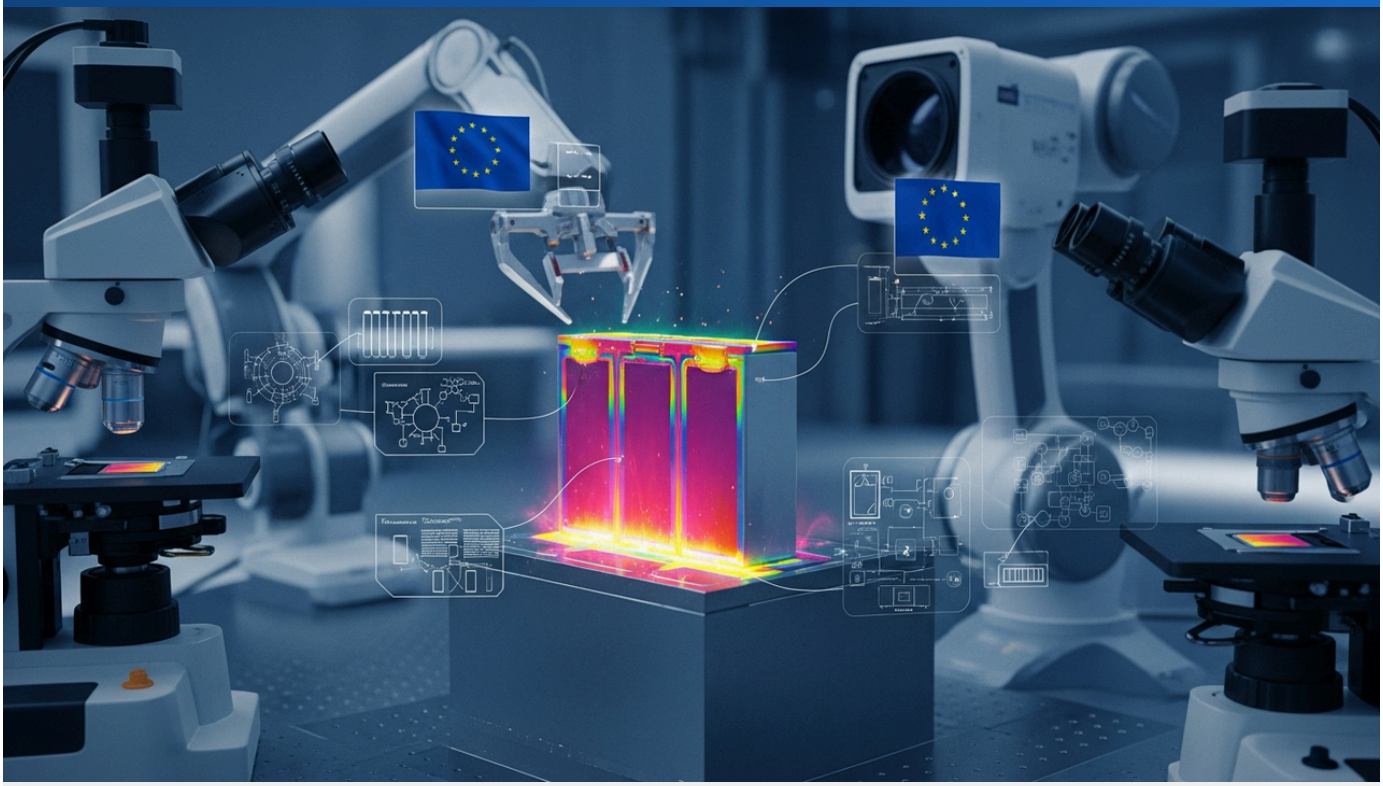
Tecman's ATP pads are anticipated to see rapid adoption as an essential technology for improving BESS safety. This technology is expected to be widely applied across various BESS applications, from grid-scale large storage systems to commercial and residential smaller systems. In the future, further advancements in material science could lead to the development of thinner, lighter, and even higher-performance ATP pads. This would enhance BESS design flexibility and energy density, further accelerating the deployment of renewable energy and modernization of grids. Through this innovation, Tecman aims to contribute to the realization of a safe and sustainable energy future.

Source: https://www.energy-storage.news/third-party-technologies-for-preventing-or-dealing-with-thermal-runaway-in-bess-assets/

Collected: June 05, 2026 | Automated Research System (Gemini API)

PatSnap Eureka Report: Thermal Stress Impact on Battery Adhesive Strength Over Time, Driven by New EU Regulations

Published May 29, 2026 PatSnap Eureka Global



OVERVIEW

A PatSnap Eureka report emphasizes understanding thermal stress effects on battery adhesives to prevent delamination and bond failure in EV and grid-scale energy storage systems. Research focuses on high-temperature resistant adhesive systems that maintain bonding strength and mechanical properties under thermal cycling and potential thermal runaway events. New regulations, such as the EU's Battery Regulation 2023/1542, are emphasizing lifecycle safety assessments and robust adhesive performance.

IN DEPTH

Key Findings

A recent PatSnap Eureka report highlights that a deep understanding of how thermal stress affects the long-term strength of battery adhesives is crucial for ensuring reliability in electric vehicle (EV) and grid-scale energy storage systems. There is an urgent need to develop high-temperature resistant adhesive systems that can maintain bonding strength and mechanical properties even under severe conditions of thermal cycling and potential thermal runaway events, preventing delamination and bond failure.

Technical / Clinical Details

Battery adhesives play multiple roles, including mechanical fixation between cells, thermal management, and electrical insulation. However, EV batteries are exposed to extensive thermal cycling due to charge/discharge cycles, ambient temperature fluctuations, and potential thermal runaway events. This thermal stress can degrade the adhesive's molecular structure, reducing its elasticity, strength, and adhesion. Research and development efforts are focusing on new-generation adhesive systems, such as epoxy resins with high glass transition temperatures (Tg), highly thermally stable silicones, and specific high-temperature polyimides. These materials are engineered to maintain stable performance over a wide temperature range, typically from -40°C to over 150°C, and are formulated with specialized fillers and additives to mitigate stress concentration at adhesive interfaces and minimize coefficient of thermal expansion (CTE) mismatch. This ensures that bonding strength is maintained, and delamination or cracking is suppressed even after prolonged thermal cycling and high-temperature exposure.

Background & Context

As the market for EVs and energy storage systems expands, battery safety and reliability have become paramount. Adhesives within battery packs play a critical role in both thermal management and structural integrity, meaning their degradation can lead to thermal runaway propagation or overall device failure. To address this issue, new regulations, including the EU’s Battery Regulation 2023/1542, have been introduced, strongly demanding lifecycle safety assessments and robust adhesive performance. Against this backdrop, innovation in adhesive technology is key to ensuring the long-term performance and safety of batteries.

Strategic Significance & Outlook

The development of thermal-stress-resistant battery adhesives is an indispensable component for next-generation EV and large-scale energy storage system designs. This will enable the realization of safer, longer-lasting, and higher-performance battery packs, further accelerating the adoption of electric vehicles and the integration of renewable energy. Moving forward, adhesive manufacturers and battery makers are expected to intensify their collaboration across material science, simulation modeling, and real-world testing to develop even more advanced adhesive solutions that maintain performance under extreme conditions. Furthermore, adhesives designed for recyclability, such as debond-on-demand technologies, will also be an important direction for future development.

Source: https://eureka.patsnap.com/report-how-thermal-stress-affects-strength-of-battery-adhesives-over-time

Collected: June 05, 2026 | Automated Research System (Gemini API)

ORAFOL Expands U.S. Presence with Maxpro Manufacturing Acquisition, Strengthening Functional Films Business Across Value Chain

Published May 30, 2026 Global Legal Chronicle Germany

OVERVIEW

ORAFOL Europe GmbH acquired Maxpro Manufacturing, LLC, a developer and manufacturer of high-quality film solutions for automotive, architectural, and paint protection applications. This acquisition expands ORAFOL's global presence and strengthens its Functional Films business unit by encompassing the entire value chain from polymer film extrusion to specialized coating and lamination processes. Deloitte Legal advised ORAFOL on the transaction.

IN DEPTH

Key Findings

ORAFOL Europe GmbH has completed the acquisition of Maxpro Manufacturing, LLC, significantly expanding its presence in the U.S. market. This acquisition is poised to strengthen ORAFOL's Functional Films business unit, enhancing its capabilities in providing high-quality film solutions across automotive, architectural, and paint protection applications.

Technical / Clinical Details

Maxpro Manufacturing, LLC specializes in the development and production of high-performance film solutions, particularly for the automotive, architectural, and paint protection sectors. Their product portfolio includes anti-scratch films, window films, and graphic protection films. Through this acquisition, ORAFOL gains control over the entire value chain for functional films, from polymer film extrusion to specialized coating and lamination processes. This vertical integration will enable higher efficiency and quality control at every stage of product design, manufacturing, and quality assurance, allowing for quicker responses to diverse customer needs. Maxpro’s advanced coating and film processing technologies are expected to bring new added value to ORAFOL’s existing product range, particularly accelerating the development of highly durable and functional film solutions.

Background & Context

The automotive industry is experiencing increasing demand for high-quality film solutions to protect vehicle aesthetics and enhance durability. In the architectural sector, the use of window films for improved energy efficiency and safety is expanding. ORAFOL, as a global leader in adhesive technology and functional films, aims to further solidify its position in these growing markets. This acquisition represents a strategic move to expand direct access to the U.S. market and address specific regional customer requirements. Deloitte Legal provided legal advisory services to ORAFOL during the acquisition process.

Strategic Significance & Outlook

The acquisition of Maxpro Manufacturing marks a crucial milestone in ORAFOL's global strategy. The integrated business is expected to accelerate technological innovation and provide high-quality functional film solutions to a broader customer base. ORAFOL aims to maximize these synergistic effects, creating new market opportunities particularly in the rapidly growing EV sector and smart building solutions. This acquisition is anticipated to broaden the scope of products and services offered by the company, further solidifying its leadership in the industry.

Source: https://www.deloitte.com/dl/en/services/legal/perspectives/transaktion-orafol-maxpro-manufacturing.html

WEVO-CHEMIE Unveils WEVOSIL 23130 High-Performance Silicone Seal for Enhanced EV Battery Thermal Runaway Protection

Published May 30, 2026 Indian Chemical News Germany

OVERVIEW

WEVO-CHEMIE has introduced WEVOSIL 23130 liquid silicone rubber, a high-performance silicone seal designed for thermal runaway protection in EV battery packs. This filler-free LSR creates a robust, airtight barrier with strong adhesion and resistance to mechanical stress, heat, and corrosive battery gases. It aids in containing gas and smoke and maintaining structural integrity during thermal events, optimized for precision dispensing in automated production lines with fast curing capabilities when heated.

IN DEPTH

Key Findings

WEVO-CHEMIE has announced the launch of WEVOSIL 23130, a high-performance silicone sealing material engineered to significantly enhance the thermal runaway protection in electric vehicle (EV) battery packs. This innovative liquid silicone rubber (LSR) is designed to effectively prevent thermal runaway propagation, thereby mitigating the risk of battery fires.

Technical / Clinical Details

WEVOSIL 23130 is a filler-free LSR that forms a robust and airtight barrier upon curing. Its key strengths lie in its strong adhesion and excellent resistance to mechanical stress, extreme heat, and corrosive battery gases. During a thermal runaway event, battery cells rapidly release gases and smoke; the seal formed by WEVOSIL 23130 effectively contains these substances, preventing their spread to adjacent cells or into the vehicle cabin. This helps maintain structural integrity and contributes to occupant safety. The material is optimized for precise dispensing in automated production lines and offers rapid curing when heated, enhancing production efficiency in EV battery manufacturing. It maintains stable performance over a broad temperature range, from -50°C to 200°C, ensuring long-term reliability.

Background & Context

With the accelerating growth of the EV market, battery safety, particularly the prevention of thermal runaway, has become a top priority for automotive manufacturers. Thermal runaway involves a cascading thermal event within the battery that can lead to fire or explosion, making effective cell isolation and control of gases and smoke critical. Conventional sealing materials often face challenges with performance degradation at high temperatures or insufficient adhesion, issues that WEVOSIL 23130 is specifically developed to address. New regulations, such as the EU Battery Regulation 2023/1542, also emphasize lifecycle safety assessments for batteries, driving demand for such high-performance materials.

Strategic Significance & Outlook

The introduction of WEVOSIL 23130 holds the potential to establish a new standard in EV battery safety design. This material is expected to enable the development of higher energy density and safer battery packs, further boosting the adoption of electric vehicles. Through this innovative technology, WEVO-CHEMIE aims to strengthen its leadership in the e-mobility market and contribute to the establishment of sustainable and safe transportation systems. Future applications in other battery cell formats and energy storage systems are also anticipated, making it an indispensable component for the evolution of next-generation battery technologies.

Source: https://www.indianchemicalnews.com/electric-vehicles/wevo-targets-ev-battery-safety-push-with-high-performance-silicone-seal-for-thermal-runaway-protection-30593

Collected: June 05, 2026 | Automated Research System (Gemini API)

Henkel Agrees to Acquire OLAPLEX for $1.4 Billion, Strengthening Position in Prestige Beauty Market

Published June 02, 2026 DelMorgan & Co. Germany

OVERVIEW

Henkel announced its plan to acquire OLAPLEX for approximately $1.4 billion, reflecting ongoing consolidation in the beauty and personal care sector. Henkel, a company with operations spanning adhesives, home care, and beauty products, aims to expand its reach in the prestige segment with OLAPLEX's brand recognition and proprietary bond-building technology. The acquisition is expected to close in the second half of 2026.

IN DEPTH

Key Findings

Henkel has agreed to acquire OLAPLEX, the innovative haircare brand, for approximately $1.4 billion. This strategic acquisition is set to significantly strengthen Henkel's presence in the global beauty and personal care market, particularly within the high-growth prestige segment.

Technical / Clinical Details

OLAPLEX is renowned for its product line centered around proprietary 'bond-building' technology, which effectively rebuilds and fortifies hair bonds, repairing damaged hair. This technology has garnered high acclaim for its ability to protect hair from chemical damage, such as coloring and perming, and maintain its healthy state. Henkel, on the other hand, holds global leadership in industrial solutions like adhesives, sealants, and functional coatings, while also being deeply involved in the beauty market through brands like Schwarzkopf. This acquisition aims to bolster Henkel's market competitiveness and accelerate innovation by integrating a high-growth, high-margin prestige brand into its beauty care portfolio.

Background & Context

The beauty and personal care industry has witnessed active M&A activities in recent years, driven by companies seeking brand consolidation and expansion into diverse product categories. As consumer demand for premium, highly effective haircare products grows, brands like OLAPLEX, with their unique, science-backed technologies, have become particularly attractive acquisition targets. Henkel, as a diversified multinational corporation with operations in adhesives, home care, and beauty products, sees the OLAPLEX acquisition as a crucial component of its beauty business growth strategy.

Strategic Significance & Outlook

The acquisition of OLAPLEX, expected to close in the second half of 2026, is poised to generate new growth opportunities for Henkel's beauty care division. Henkel intends to leverage its global distribution network and R&D capabilities to make OLAPLEX's innovative products accessible to a broader consumer base. This integration is anticipated to drive further growth for the OLAPLEX brand while contributing to increased profitability and market share for Henkel's overall beauty business. Long-term, Henkel plans to continue investing in sustainable product development and technological innovation to meet evolving consumer needs.

Source: https://delmorganco.com/olaplex-to-be-acquired-by-henkel-for-1-4bn/

Collected: June 05, 2026 | Automated Research System (Gemini API)

Ammega Expands Georgia Facility for World's First Water-Based Polyurethane Belt Production, Driving Sustainability and VOC Reduction

Published June 03, 2026 The National Provisioner USA

OVERVIEW

Ammega Group has expanded its Georgia facility to exclusively produce water-based polyurethane (PU) belts, becoming its first global site to do so. This innovation significantly reduces atmospheric pollution by replacing chemical carriers with water and improves biodegradability, enhancing overall sustainability. This strategic move proactively addresses future regulatory needs, particularly in Europe, regarding VOC and REACH regulations.

IN DEPTH

Key Findings

The Ammega Group has expanded its manufacturing facility in Georgia, U.S., becoming the first global site to exclusively produce water-based polyurethane (PU) belts. This pioneering initiative dramatically reduces atmospheric pollution by replacing chemical solvents with water-based technology in the manufacturing process, thereby significantly enhancing the environmental sustainability of its products.

Technical / Clinical Details

The production of water-based polyurethane belts is characterized by the use of water instead of chemical solvents in the manufacturing process. This leads to a substantial reduction in volatile organic compound (VOC) emissions, improving the working environment within the factory and mitigating air pollution risks. Water-based PU is environmentally friendly, resulting in a smaller environmental footprint throughout the product's life cycle. The manufactured belts are designed for a wide range of industrial applications, including food processing, logistics, and agriculture, offering mechanical strength, abrasion resistance, and durability comparable to, or exceeding, conventional PU belts. Furthermore, the water-based formulation improves biodegradability, further reducing environmental impact during disposal. This technological innovation anticipates future stricter environmental regulations, particularly in Europe, regarding REACH regulations and VOC emission standards, positioning Ammega as a frontrunner.

Background & Context

The industrial belt manufacturing sector faces increasing environmental regulations and demands for sustainability. VOC emissions, in particular, are strictly limited in many countries due to concerns about worker health and environmental impact. Consequently, manufacturers are compelled to transition to more environmentally friendly production methods and materials while maintaining performance. Ammega's investment strategically responds to these market and regulatory trends, aiming to establish the company's leadership in sustainable manufacturing.Strategic Significance & Outlook

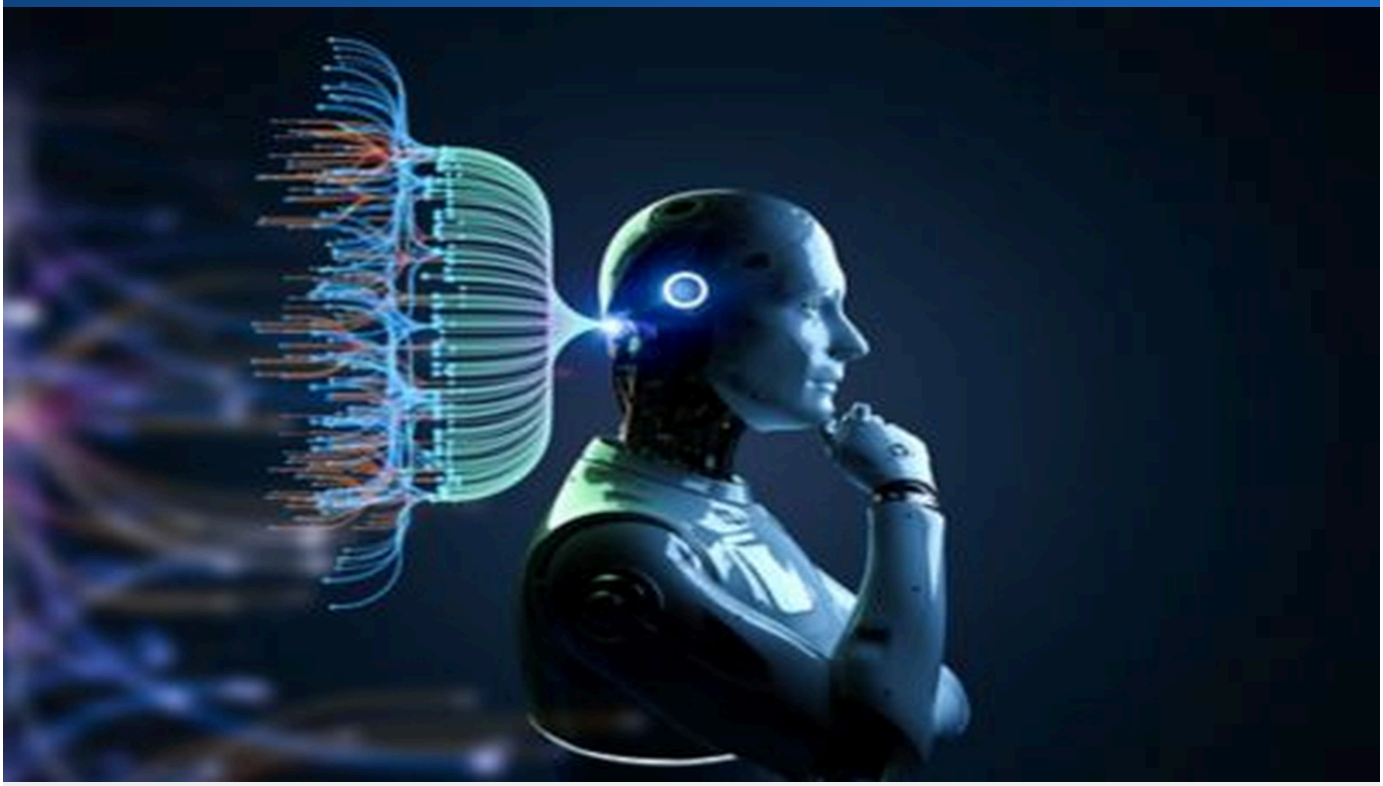
The expansion of water-based PU belt production at Ammega's Georgia facility holds the potential to set new standards for sustainability in the industrial belt industry. This technology is expected to be deployed at other manufacturing sites and applied across various product lines, contributing to a reduction in Ammega's overall environmental footprint. Furthermore, water-based PU belts will provide a competitive advantage in environmentally conscious customer segments and markets with stringent VOC regulations. Through this innovation, Ammega is anticipated to deliver environmentally responsible product solutions and drive industrial transformation towards a sustainable future.

Source: https://www.provisioneronline.com/articles/120716-ammega-expands-capabilities-at-georgia-facility-with-water-based-polyurethane-belt-production

Collected: June 05, 2026 | Automated Research System (Gemini API)

Henkel Adhesives Innovates Advanced Semiconductor Packaging Materials for High-Performance Computing and Generative AI

Published Date unknown Henkel Adhesives Germany



OVERVIEW

Henkel is developing innovative material solutions for advanced semiconductor packaging, addressing demands for higher performance, greater integration, and improved efficiency in a rapidly evolving tech landscape. The focus is on materials enabling fine pitch, high-density interconnections, crucial for 2.5D and 3D packaging technologies driven by high-performance computing and generative AI. These advancements are critical for next-generation chip designs.

IN DEPTH

Key Findings

Henkel Adhesives is developing innovative material solutions tailored for the rapidly evolving semiconductor packaging market, driven by the demands of next-generation High-Performance Computing (HPC) and Generative AI technologies. The company is focusing on materials that enable higher performance, greater integration, and improved efficiency through fine pitch and high-density interconnections.

Technical / Clinical Details

Henkel's material solutions form the foundation for advanced packaging technologies such as 2.5D and 3D packaging. Key innovations include:

- **Underfill Materials:** Low-stress, high-toughness underfills are being developed to mitigate stress caused by coefficient of thermal expansion (CTE) mismatch between chip and substrate, enhancing solder joint reliability. This ensures high connection reliability even with fine bump pitches.
- **Die Attach Films (DAF) / Pastes:** With demands for thinner packages and high thermal conductivity, DAFs and pastes are being developed that balance high adhesion strength with excellent heat dissipation capabilities, improving thermal management in multi-layered packaging.
- **Epoxy Molding Compounds (EMC):** Critical EMCs provide protection against moisture, chemicals, and physical damage while offering high thermal stability and low outgassing. Low-viscosity, high-flow EMCs are crucial for thin, reliable packaging.
- **Thermal Interface Materials (TIM):** High thermal conductivity (e.g., >3 W/mK) and long-term stability are essential for TIMs to enable efficient heat transfer from heat sources to heat sinks.

These materials require precise dispensing capabilities and controlled curing characteristics to support fine wiring patterns and high-density stacked structures.

Background & Context

The semiconductor industry is facing the limits of Moore's Law, making innovation in packaging technology indispensable for performance improvements. AI and HPC applications, in particular, require high-speed processing of vast amounts of data, making chip-level interconnection density and thermal management more critical than ever. 2.5D/3D packaging, which vertically or horizontally integrates multiple chiplets, is a key method for reducing footprint and increasing data transfer speeds. Henkel, with its expertise in adhesives and material science, plays a crucial role as a partner in meeting the demands of this evolving market.

Strategic Significance & Outlook

Henkel's advanced semiconductor packaging material solutions are essential for accelerating the realization of next-generation AI chips and HPC systems. These materials are expected to find broad applications in high-performance sectors such as data centers, autonomous driving systems in automotive, and 5G infrastructure. The company plans to continue investing in R&D, contributing to the sustainable growth of the semiconductor industry through improved material performance, enhanced manufacturing process efficiency, and greater environmental compatibility. This will further solidify Henkel's position as a leading material provider supporting technological innovation.

Source: https://next.henkel-adhesives.com/my/en/articles/market-evolution-and-material-solutions.html

Collected: June 05, 2026 | Automated Research System (Gemini API)

Alliance Chemical Report: Advanced Talc Applications Crucial for EV Battery Thermal Management and Power Electronics Reliability

Published May 29, 2026 Alliance Chemical USA

OVERVIEW

An Alliance Chemical report highlights that engineered talc grades are becoming critical in high-tech manufacturing, including EV battery thermal management and power electronics. In epoxy molding compounds for automotive-grade power devices, talc's platelet morphology helps reduce the coefficient of thermal expansion (CTE) mismatch, improving reliability during thermal cycling. Talc is also used in thermal interface materials, intumescent fire barriers, and battery enclosure compounds due to its cost-effectiveness and performance.

IN DEPTH

Key Findings

A report by Alliance Chemical emphasizes that engineered talc grades are emerging as crucial materials in high-tech manufacturing, particularly for electric vehicle (EV) battery thermal management and power electronics. Its unique lamellar structure plays a key role in enhancing device reliability under thermal stress.

Technical / Clinical Details

Talc, with its distinctive lamellar crystal structure (thin platelet morphology), significantly improves the performance of various advanced materials. In epoxy molding compounds (EMCs) used for automotive-grade power devices (e.g., SiC power modules), talc effectively reduces the coefficient of thermal expansion (CTE) mismatch. This mitigates stress concentration during high-temperature semiconductor assembly processes and prolonged thermal cycling, substantially reducing the risk of failures such as package warpage, delamination, and resin cracking. In EV battery modules, talc-filled silicone or polyurethane gap pads serve as thermal interface materials (TIMs), achieving thermal conductivities of 1.5–3.0 W/m·K while maintaining compliance for cell swelling. This offers a cost-effective alternative compared to more expensive boron nitride-filled TIMs. Furthermore, talc is utilized in intumescent fire barrier compounds that provide thermal protection during thermal runaway events and as a structural component in battery enclosure compounds, imparting high flame retardancy and mechanical strength.

Background & Context

Modern electronics and EVs are characterized by increasing density, power output, and miniaturization, which exacerbate challenges related to thermal management and reliability. In power electronics, operating at high temperatures and undergoing repeated thermal cycles significantly impacts device lifespan. For EV batteries, preventing thermal runaway and ensuring safety are paramount. While conventional materials have struggled to meet all these demands, versatile minerals like talc are gaining attention for offering excellent solutions in terms of both cost-efficiency and performance. In regions like China, efforts to localize semiconductor material production are intensifying, driving demand for high-performance EMCs and TIMs.

Strategic Significance & Outlook

The advanced technological applications of talc hold the potential to drive further innovation in fields requiring high thermal management and reliability, such as EVs, power electronics, and AI infrastructure. Its balance of cost-effectiveness and performance will promote its adoption, especially in large-scale manufacturing. Future advancements are expected in talc surface modification techniques and its optimization as a composite material, leading to the development of even higher thermal conductivity and higher-performance TIMs and EMCs. Companies like Alliance Chemical will continue to support the development of these cutting-edge industries through the supply of talc and the development of application technologies.

Source: https://alliancechemical.com/blogs/articles/talc-advanced-technology-ev-batteries-power-electronics

Collected: June 05, 2026 | Automated Research System (Gemini API)

Sumitomo Bakelite Develops G785 Series High-Tg Epoxy Molding Compounds with Industry-Leading 230°C Tg for Next-Gen SiC Power Modules

Published June 01, 2026 Sumitomo Bakelite Co., Ltd. Japan

OVERVIEW

Sumitomo Bakelite has developed the 'G785 Series' of high-Tg epoxy molding compounds for next-generation SiC power modules, achieving an industry-leading glass transition temperature (Tg) of 230°C. This material resolves the trade-off between high Tg and low stress by suppressing modulus increase, minimizing warpage, and preventing delamination and resin cracking. This significantly enhances packaging reliability for SiC devices operating at high temperatures, critical for EV and renewable energy applications.

IN DEPTH

Key Findings

Sumitomo Bakelite Co., Ltd. has successfully developed the 'G785 Series' of high-Tg epoxy molding compounds (EMCs) for next-generation Silicon Carbide (SiC) power modules, boasting an industry-leading glass transition temperature (Tg) of 230°C. This breakthrough material addresses the long-standing challenge of balancing high Tg with low stress, dramatically improving the long-term reliability of SiC devices operating in high-temperature environments.

Technical / Clinical Details

The G785 Series uniquely suppresses the excessive modulus increase typically associated with conventional high-Tg materials after curing. This proprietary technology allows the material to achieve an exceptionally high Tg of 230°C while effectively mitigating thermal stress generated within the package. As a result, common reliability issues such as warpage, delamination between the die and lead frame, and resin cracking—which often occur during power module manufacturing or high-temperature operation—are minimized. SiC power modules are designed for higher operating temperatures (typically above 200°C) compared to Si devices, and the resulting stress from coefficient of thermal expansion (CTE) mismatch directly impacts device lifespan. The G785 Series fundamentally resolves this CTE mismatch-induced stress problem, enabling high-reliability packaging. Furthermore, it possesses excellent electrical insulation, moisture resistance, and heat resistance, ensuring stable operation under severe environmental conditions.

Background & Context

SiC power devices are gaining significant attention as key components for next-generation power converters in electric vehicles (EVs), renewable energy systems, and industrial equipment, owing to their high power efficiency and potential for miniaturization. However, because SiC devices operate at higher temperatures than Si devices, packaging materials demand superior heat resistance and reliability. Historically, high-Tg materials offered excellent thermal stability but suffered from a trade-off: increased rigidity after curing led to higher internal stress. This challenge has been a major impediment to improving the performance and reliability of SiC power modules. Sumitomo Bakelite's G785 Series overcomes this technological barrier, accelerating the adoption and advancement of SiC power modules.

Strategic Significance & Outlook

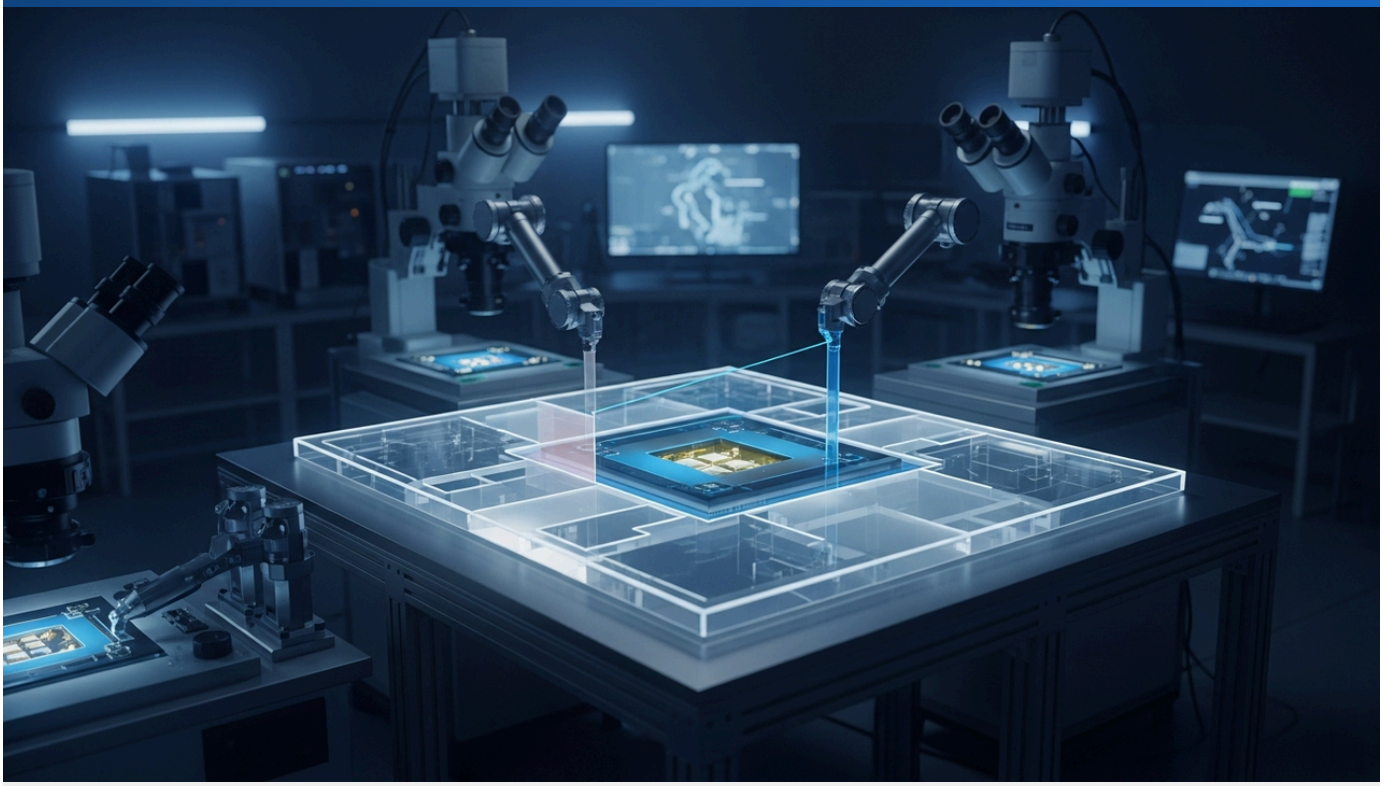
The introduction of the G785 Series holds the potential to redefine packaging technology standards in the SiC power module market. This innovative material will contribute to enhancing product performance and reliability across various applications, such as extending EV driving ranges, shortening charging times, and improving the efficiency of solar power generation systems. Sumitomo Bakelite plans to deploy the G785 Series globally, providing strong material support for the development of next-generation power electronics. Through this, the company is expected to further solidify its leadership as an advanced materials supplier and contribute to the realization of a sustainable society.

Source: https://www.sumibe.co.jp/english/topics/2026/it-materials/0428_01/index.html

Collected: June 05, 2026 | Automated Research System (Gemini API)

PatSnap Eureka Report: Reducing Voiding in Chip Embedding Epoxies Critical for High-Reliability Systems in Automotive and Aerospace

Published May 29, 2026 PatSnap Eureka Global



OVERVIEW

A PatSnap Eureka report identifies reducing voiding in chip embedding epoxies as a critical reliability challenge in high-performance electronic packaging, particularly for automotive and aerospace systems. Companies like Resonac and Sumitomo Bakelite are developing advanced epoxy molding compounds with optimized rheological properties, controlled curing kinetics, low-viscosity formulations, and degassing additives to minimize void formation. These technologies aim to enhance wetting, dimensional stability, and long-term reliability of devices.

IN DEPTH

Key Findings

A recent PatSnap Eureka report highlights that minimizing voiding in chip embedding epoxies is a critical reliability challenge in high-performance electronic packaging, especially for demanding automotive and aerospace systems. Voids can significantly degrade device reliability, making their suppression a central focus of technological innovation.

Technical / Clinical Details

The primary approaches to reducing void formation involve both material and process advancements. On the material front, leading companies such as Resonac (formerly Showa Denko Materials) and Sumitomo Bakelite are focusing on developing advanced epoxy molding compounds (EMCs) with optimized properties:

- **Optimized Rheological Properties:** Precisely controlled resin flow ensures uniform filling of micro-gaps and complex structures, suppressing void entrapment.
- **Controlled Curing Kinetics:** Rapid curing can trap bubbles, so precise control over curing speed and profile allows sufficient time for bubbles to escape.
- **Low-Viscosity Formulations:** Lower viscosity epoxies wet around chips more efficiently and promote bubble expulsion.
- **Degassing Additives:** Specialized additives are incorporated to efficiently release gases generated during curing, preventing void formation.

On the process front, techniques like vacuum molding, dispensing under reduced pressure, and optimized thermal curing profiles are employed. These technologies aim to improve adhesive wetting, ensure dimensional stability, and enhance the long-term reliability of devices.

Background & Context

Modern electronic devices demand miniaturization, higher integration, and enhanced reliability at elevated operating temperatures. In automotive electronics and aerospace applications, safety and reliability are paramount, as even minor voids can lead to short circuits, reduced heat dissipation, mechanical weak points, and ultimately, device failure. Consequently, packaging material manufacturers are heavily investing in developing void-free or near-voidless epoxy resins. This technology is also indispensable for the advancement of AI chips and High-Performance Computing (HPC), providing a key solution to packaging challenges in complex chip designs.

Strategic Significance & Outlook

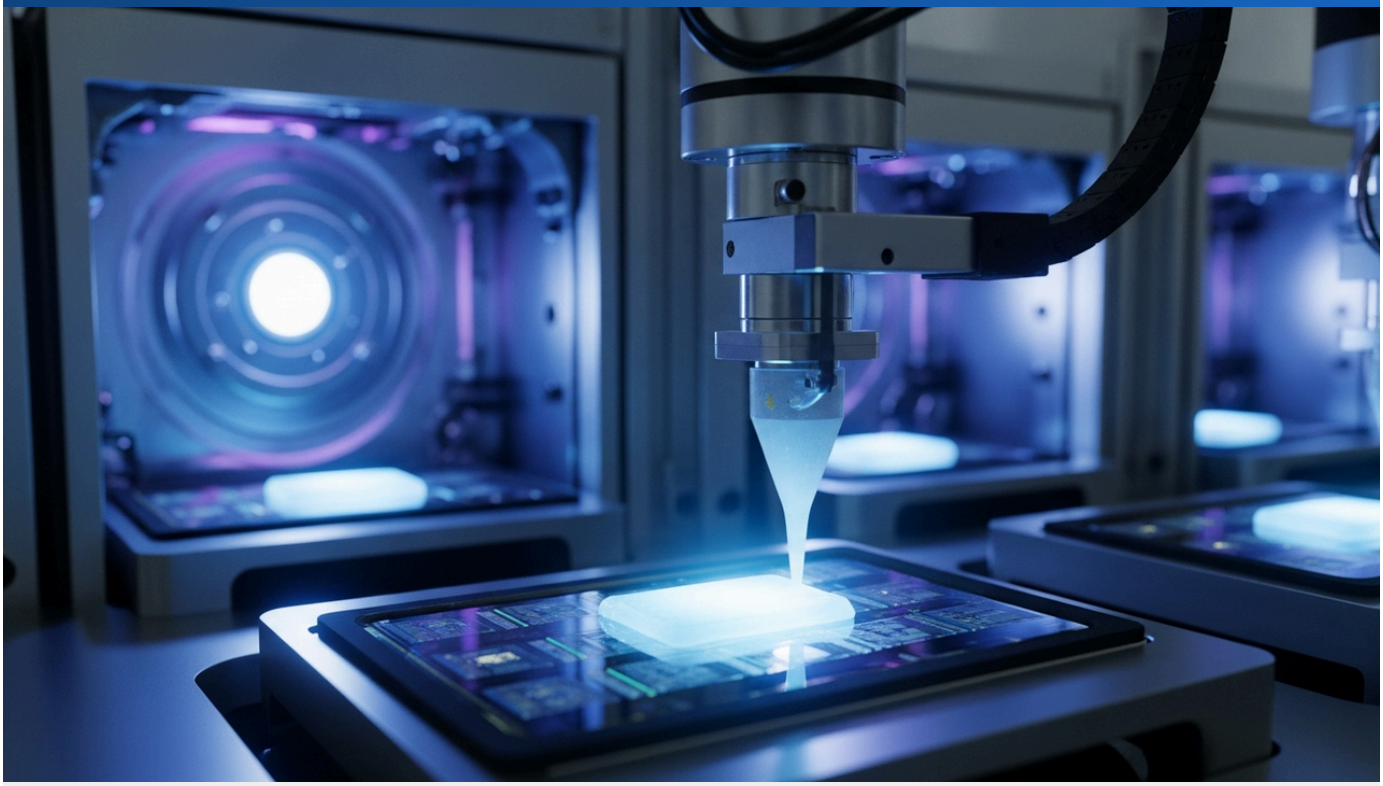
Advances in void reduction technologies for chip embedding epoxies are essential for the development of next-generation high-reliability electronic devices. These advancements will enable more robust and longer-lasting devices, leading to increased adoption in critical applications such as autonomous vehicles, space probes, and medical implants, where human safety may be involved. Going forward, material suppliers and device manufacturers are expected to leverage AI-driven material design and process optimization to further suppress void formation, accelerating technological innovation across the electronics industry.

Source: https://eureka.patsnap.com/report-how-to-reduce-voiding-in-chip-embedding-epoxies-for-high-reliability-systems

Collected: June 05, 2026 | Automated Research System (Gemini API)

PatSnap Eureka Report: UV-Curable Adhesives Achieve Ultra-Fast Curing (2-3 seconds) for Accelerated Chip Embedding in Semiconductor Manufacturing

Published May 30, 2026 PatSnap Eureka Global



OVERVIEW

A PatSnap Eureka report reveals the semiconductor industry's increasing adoption of UV-curable adhesives for chip embedding due to their rapid curing capabilities and advantages in precision manufacturing. Companies like 3M are developing UV-curable adhesives with advanced acrylate chemistry for structural bonding, focusing on thermal management, electrical insulation, and low shrinkage. These adhesives achieve ultra-fast curing times (5-30 seconds, some as fast as 2-3 seconds for initial tack) under UV exposure, significantly boosting production throughput.

IN DEPTH

Key Findings

A recent PatSnap Eureka report highlights the accelerating adoption of UV-curable adhesives in chip embedding operations within the semiconductor industry. This trend is primarily driven by the superior rapid curing capabilities and significant advantages these adhesives offer in precision manufacturing, leading to dramatic improvements in production efficiency and throughput.

Technical / Clinical Details

UV-curable adhesives initiate and complete curing within seconds when exposed to specific wavelengths of ultraviolet (UV) light. According to the report, these adhesives typically cure within 5-30 seconds, with some ultra-fast curing types achieving initial tack in just 2-3 seconds. This represents a substantial reduction in manufacturing cycle time compared to traditional thermosetting adhesives, which can take minutes to hours. Leading material manufacturers, such as 3M, are developing UV-curable adhesives based on advanced acrylate chemistry, focusing on achieving multi-functional performance including structural bonding, thermal management, electrical insulation, and low shrinkage. Low shrinkage is essential for minimizing material volume change during curing, thereby ensuring dimensional stability of precision components. These adhesives also demonstrate excellent adhesion strength to various substrates commonly used in semiconductor packaging (e.g., silicon, ceramics, polymers), enhancing device reliability. Furthermore, being solvent-free, they emit no VOCs (Volatile Organic Compounds), contributing to improved workplace safety and environmental compatibility.

Background & Context

In the semiconductor industry, as Moore's Law approaches its limits, innovative packaging technologies are indispensable for achieving both miniaturization and enhanced performance. Chip embedding, a technique where chips are directly integrated into the substrate, enables thinner packages, reduced footprints, and improved electrical characteristics. This process demands fast and high-precision bonding, where traditional adhesive technologies could become a production bottleneck. UV-curable adhesives, with their rapid curing and precise application and curing control capabilities, are emerging as an ideal solution to this challenge, directly contributing to the advancement of AI chips, HPC (High-Performance Computing), and mobile devices.

Strategic Significance & Outlook

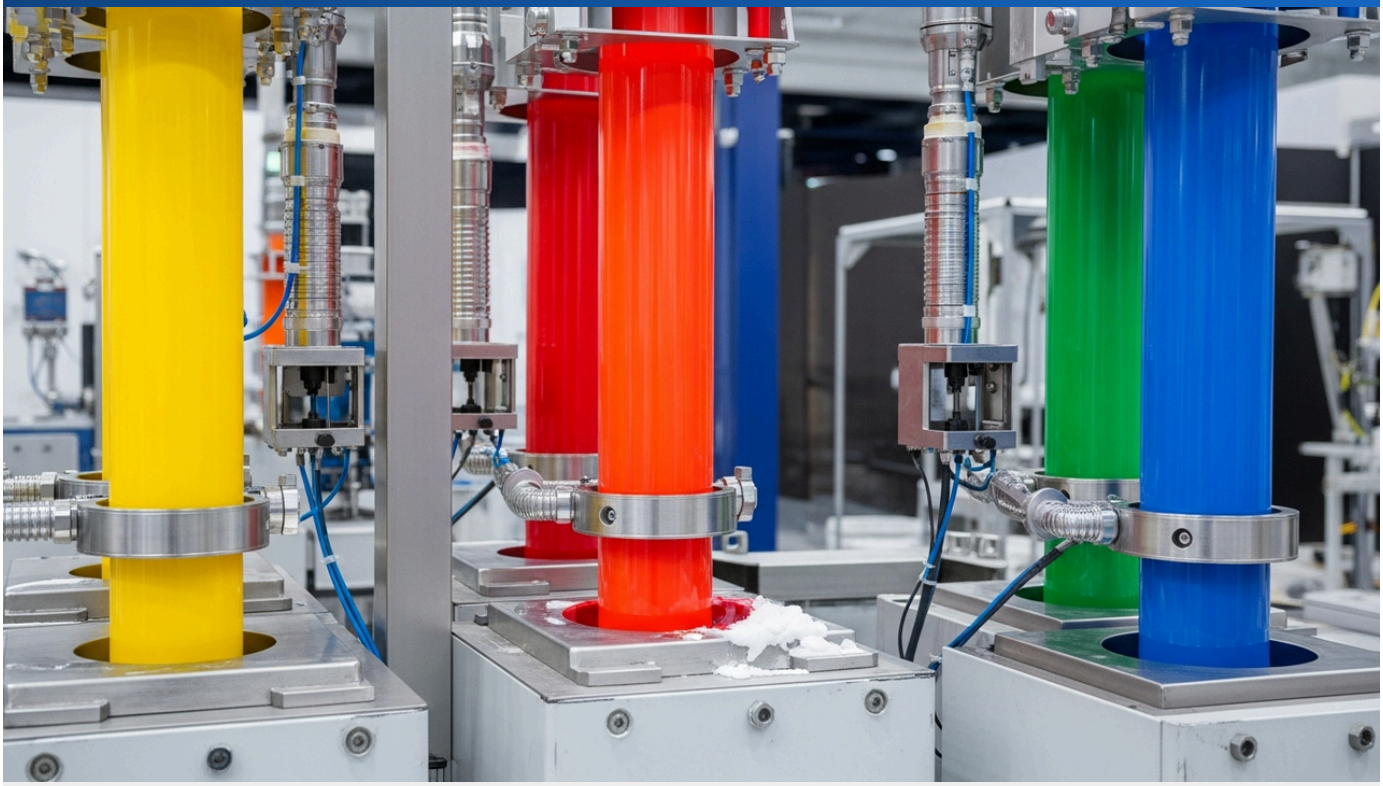
The continued advancement of UV-curable adhesive technology will play a crucial role in the future of semiconductor packaging. Faster and more reliable bonding solutions will enable the mass production of next-generation compact and highly integrated devices, accelerating the widespread adoption of cutting-edge technologies like AI, 5G, IoT, and autonomous vehicles. Moving forward, material manufacturers are expected to focus on developing custom formulations that offer even better thermal management performance, mechanical strength, and specific application requirements (e.g., flexibility or impact resistance). Optimizing and integrating UV curing processes will also be an important direction for improving productivity.

Source: https://eureka.patsnap.com/report-comparing-uv-curable-adhesives-for-speed-in-chip-embedding-operations

Collected: June 05, 2026 | Automated Research System (Gemini API)

Brilliant Polymers Showcases Energy-Efficient, VOC-Free Solvent-Free Adhesives for Flexible Packaging at Interpack

Published May 28, 2026 Packaging South Asia India



OVERVIEW

Brilliant Polymers showcased its latest solvent-free adhesive technologies for flexible packaging at Interpack 2026. These next-generation laminating adhesives are designed for high-speed lamination environments, offering operational and sustainability advantages by reducing energy consumption, eliminating VOC emissions, and improving workplace safety. They are suitable for a wide range of demanding flexible packaging applications, including retort sterilization and deep freezing.

IN DEPTH

Key Findings

Brilliant Polymers unveiled its cutting-edge solvent-free adhesive technologies tailored for the flexible packaging industry at Interpack 2026. These next-generation laminating adhesives are optimized for high-speed lamination environments, delivering significant benefits in terms of both environmental footprint reduction and enhanced production efficiency.

Technical / Clinical Details

The solvent-free adhesives showcased by Brilliant Polymers are distinguished by their complete absence of VOC (Volatile Organic Compound) emissions during the manufacturing process, unlike conventional solvent-based adhesives. This ensures cleaner air in the workplace, reducing health risks for operators and contributing to atmospheric pollution prevention. Furthermore, by eliminating the need for a solvent drying step, substantial energy consumption savings are achieved, leading to reduced production costs. These adhesives are specifically designed for high-speed laminators, offering a balance of excellent initial tack and high bond strength, which boosts production line throughput. They are compatible with a wide range of film substrates (e.g., polyester, nylon, OPP) and provide superior interlaminar strength and durability for various demanding flexible packaging applications, including retort sterilization, deep freezing, and hot filling.

Background & Context

In the flexible packaging industry, demands for product protection, convenience, and aesthetics are increasingly coupled with a strong emphasis on environmental sustainability. Stricter VOC emission regulations and rising energy costs are key factors accelerating manufacturers' transition to solvent-free technologies. Brilliant Polymers has proactively responded to these market trends by developing innovative solvent-free adhesive solutions, helping its customers achieve environmental goals and maintain competitiveness. Based in India, the company plays a vital role in supporting the growth of the flexible packaging market in the Asian region.

Strategic Significance & Outlook

Brilliant Polymers' solvent-free adhesive technology holds the potential to establish new standards for sustainability and efficiency in the flexible packaging industry. Its adoption is expected to expand rapidly across a broad range of packaging applications for food, beverages, pharmaceuticals, and personal care products. Through continuous research and development, the company plans to introduce even higher-performance and multi-functional solvent-free adhesives, while also improving compatibility with bio-based and recycled materials, thereby strengthening its contribution to the circular economy. This will solidify Brilliant Polymers' position as a leading provider of environmentally conscious packaging solutions.

Source: https://packagingsouthasia.com/events/brilliant-polymer-interpack/

DalFort Capital Partners Closes Second Fund at $166 Million, Exceeding Hard Cap; Successfully Sells Polymer Adhesives Holdings

Published May 29, 2026 PR Newswire USA

OVERVIEW

DalFort Capital Partners announced the successful closing of its second fund at $166 million, exceeding its hard cap. Simultaneously, the firm announced the sale of Polymer Adhesives Holdings, a manufacturer of high-performance duct sealants, adhesives, and fire-stopping materials, to DiversiTech Corporation. Polymer Adhesives had strategically expanded its product offering and manufacturing footprint through the acquisitions of Volunteer Adhesives (solvent- and water-based adhesives) and Fielco Adhesives (two-part epoxy systems).

IN DEPTH

Key Findings

DalFort Capital Partners has announced the successful closing of its second fund at $166 million, surpassing its initial hard cap. Concurrently, DalFort also disclosed the sale of its portfolio company, Polymer Adhesives Holdings—a manufacturer of high-performance duct sealants, adhesives, and fire-stopping materials—to DiversiTech Corporation.

Technical / Clinical Details

Polymer Adhesives Holdings manufactures a comprehensive range of specialty chemical products, including duct sealants, adhesives, and fire-stopping materials. Under the sponsorship of DalFort Capital Partners, the company aggressively expanded its product portfolio and manufacturing footprint through strategic acquisitions. Specifically, it acquired Volunteer Adhesives, known for its strengths in water-based and solvent-based adhesives, and Fielco Adhesives, specializing in two-part epoxy systems. These acquisitions strengthened its technological base and market reach, enabling it to offer high-functional bonding and sealing solutions catering to diverse customer needs in the HVAC (Heating, Ventilation, and Air Conditioning) industry, construction, and manufacturing sectors. Notably, demand for fire-stopping materials is increasing due to stricter building safety standards.

Background & Context

DalFort Capital Partners, a private equity firm, supports mid-market companies by investing in them to enhance corporate value and foster growth. The sale of Polymer Adhesives Holdings is a prime example of DalFort successfully guiding a portfolio company through strategic growth and achieving a favorable exit. The specialty chemicals and construction materials markets are experiencing active M&A activity, driven by responses to environmental regulations and increasing demand for high-performance products. DiversiTech Corporation, a leading supplier of HVAC-related products, will complement its product line and strengthen its market competitiveness through the acquisition of Polymer Adhesives.

Strategic Significance & Outlook

The successful closing of DalFort Capital Partners' second fund and the sale of Polymer Adhesives Holdings underscore the effectiveness of its investment strategy. This establishes a strong foundation for DalFort to pursue new investment opportunities. Meanwhile, Polymer Adhesives Holdings, now integrated into DiversiTech Corporation, is expected to further accelerate product development and market expansion by leveraging larger resources and distribution channels. Demand for high-performance adhesives, sealants, and fire-stopping materials is projected to continue strong growth, supported by global trends such as infrastructure development, sustainable building, and energy efficiency improvements. This integration is poised to contribute to the evolution of material solutions in the HVAC and construction industries.

Source: https://www.prnewswire.com/news-releases/dalfort-closes-second-fund-at-166-million-exceeding-its-hard-cap-302785562.html

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ResearchGate Paper: Semi-Interpenetrating Organogel OPSA with Reversible Hydrogen Bonding Developed for Dynamic Optical Devices

Published June 04, 2026 ResearchGate (Wiley - Advanced Materials Technologies) Global

OVERVIEW

A ResearchGate paper reports the development of semi-interpenetrating network organogel optical pressure-sensitive adhesives (OPSAs) with reversibly controlled hydrogen-bonding interactions for dynamic optical devices. Designed to improve dynamic bonding stability under repeated deformation, this OPSA demonstrates strong peel adhesion, excellent flexibility, and high transmittance, making it highly suitable for flexible electronics applications. This breakthrough addresses critical challenges in device reliability and longevity.

IN DEPTH

Key Findings

According to a recent research paper published on ResearchGate, a semi-interpenetrating network organogel optical pressure-sensitive adhesive (OPSA) has been developed for dynamic optical devices, featuring reversibly controllable hydrogen-bonding interactions. This OPSA is designed and fabricated to enhance dynamic bonding stability under repeated deformation, exhibiting high peel adhesion, excellent flexibility, and high transmittance, thereby holding significant potential to revolutionize next-generation flexible electronics.

Technical / Clinical Details

The OPSA developed in this study addresses limitations of conventional pressure-sensitive adhesives, particularly their diminished bonding stability under dynamic stresses such as repeated bending or stretching. Key technical features include:

- **Semi-Interpenetrating Network Structure:** The formation of a semi-interpenetrating network (semi-IPN) between polymers and organogels ensures a balance of mechanical strength and flexibility, improving stress distribution capabilities within the material.
- **Reversible Hydrogen Bonding Interactions:** The molecular design incorporates hydrogen bonds that can form and break in response to temperature or mechanical stress. This allows for dynamic adjustment of the adhesive's viscoelastic properties, maintaining stable adhesion performance even under dynamic deformation.
- **High Peel Adhesion and Flexibility:** The developed OPSA demonstrates superior peel adhesion compared to traditional adhesives, while retaining excellent flexibility essential for flexible devices. This reduces the risk of delamination and cracking in multi-layered device structures.
- **High Transmittance:** For optical applications, the OPSA achieves high light transmittance of over 90% in the visible light spectrum, minimizing color shift and optical loss.

This combination of properties reduces the risk of delamination and cracking in multi-layered display structures, thereby improving device lifespan and reliability.

Background & Context

The market for flexible electronics, including foldable smartphones, wearable devices, and flexible displays, is expanding rapidly. These devices must withstand frequent and dynamic deformations such as bending, stretching, and compression, demanding high flexibility and dynamic bonding stability from internal adhesives. Traditional optical clear adhesives (OCAs/PSAs) excel in static adhesion but are prone to delamination and degradation under dynamic stress. This research represents a significant step towards bridging this gap, providing a foundational technology crucial for enhancing the performance of next-generation flexible devices.

Strategic Significance & Outlook

The newly developed OPSA is expected to find wide application in dynamic optical devices and flexible electronics, including flexible displays, e-paper, flexible sensors, and wearable medical devices. Its ability for self-healing and viscoelastic adjustment through reversible hydrogen bonding can enhance device durability and extend lifespan. Moving forward, research is anticipated to further develop OPSAs tailored for diverse applications and to scale up production, thereby accelerating the growth of the entire flexible electronics market.

Source: https://www.researchgate.net/publication/405705215_Semi-Interpenetrating_Organogel_Optical_Pressure-Sensitive_Adhesive_With_Reversible_Hydrogen-Bonding_Interactions_for_Dynamic_Optical_Devices

Fengling New Materials: Expert Manufacturer of UV-Curable Adhesives for Electronics, Medical, and Optical Industries

Published June 02, 2026 YouTube (Fengling New Materials) China

OVERVIEW

Fengling New Materials specializes in UV-curable adhesives, epoxy adhesives, and advanced bonding materials for diverse industrial applications including electronics, medical devices, optical components, and automotive. The company is dedicated to advancing UV curing technologies that provide reliable bonding and protection solutions, from medical device assembly to PCB and energy storage systems. Their focus is on enhancing product performance and longevity across these critical sectors.

IN DEPTH

Key Findings

Fengling New Materials, a specialist manufacturer of UV-curable adhesives, epoxy adhesives, and advanced bonding materials, provides high-quality solutions to diverse industrial sectors including electronic components, medical devices, optical components, and the automotive industry. The company contributes to improving product performance and longevity in these industries through reliable bonding and protection solutions.

Technical / Clinical Details

The UV-curable adhesives offered by Fengling New Materials boast the primary advantage of rapid curing, typically within seconds, dramatically enhancing production efficiency. These adhesives combine properties such as high transparency, excellent chemical resistance, heat resistance, and low shrinkage. They prove particularly valuable in applications demanding high precision and performance, such as optical lens bonding and display lamination. Epoxy adhesives, known for their high strength, moisture resistance, and chemical resistance, are widely used for PCB (Printed Circuit Board) fixation and semiconductor packaging. In the medical device sector, biocompatible adhesives are essential for device assembly and sealing, and Fengling provides products that meet these requirements. Through these materials, the company contributes to the miniaturization of electronic devices, improved thermal management, and ensured long-term reliability.

Background & Context

Modern manufacturing, especially in high-tech industries, demands accelerated production processes, cost reduction, and minimized environmental impact. UV curing technology, being solvent-free, results in low VOC (Volatile Organic Compound) emissions and high energy efficiency, making it an ideal solution to meet these requirements. As a China-based company, Fengling New Materials is responding to the rapidly growing demands of the electronics and medical device markets, enhancing its international competitiveness. The company's expertise is particularly valuable in areas where advancements in bonding technology directly translate to product performance.

Strategic Significance & Outlook

Fengling New Materials plans to further expand its product portfolio through continuous research and development in UV curing and epoxy adhesive technologies, catering to diverse industrial needs. The company will focus on application development in emerging technological fields such as 5G communication, AI devices, and EV battery systems. By providing high-quality products and custom solutions, Fengling aims to support its customers' innovations and establish its leadership in the global market. Furthermore, the company is expected to drive eco-friendly product development and contribute to the realization of a sustainable society.

Source: https://www.youtube.com/watch?v=WLwLcMPetq0

Siegwerk Launches Cirkit Novaseal Heat Seal Lacquer Portfolio Integrating Circular Economy Strategy for Fiber-Based and Flexible Packaging

Published June 02, 2026 Packaging Strategies Germany

OVERVIEW

Siegwerk has introduced its Cirkit Novaseal heat seal lacquer portfolio for fiber-based and flexible packaging, engineered to provide consistent sealing, hot-tack performance, and bond strength. The portfolio includes variants with low seal initiation temperatures for energy-efficient processing and high hot tack for high-speed packaging lines. This innovative product series integrates circular economy strategies into its development, balancing sustainability with high performance for demanding packaging applications.

IN DEPTH

Key Findings

Siegwerk has launched 'Cirkit Novaseal,' a new heat seal lacquer portfolio designed for the fiber-based and flexible packaging industries, delivering a consistent sealing performance, superior hot tack, and high bond strength. This innovative product series uniquely integrates circular economy strategies into its development, aiming to balance sustainability with high performance.

Technical / Clinical Details

The Cirkit Novaseal portfolio comprises multiple variants to cater to a broad spectrum of packaging applications. Key technical features include:

- **Consistent Sealing Performance:** Ensures stable sealing across different substrates and machine conditions, contributing to product protection and freshness preservation.
- **Superior Hot Tack:** Provides quick development of sufficient strength in the initial bonding phase on high-speed packaging lines, improving production efficiency by reducing the risk of line stoppages and increasing throughput.
- **Low Seal Initiation Temperature:** Engineered to allow sealing at relatively lower temperatures, enabling more energy-efficient processing. This contributes to reducing energy consumption during manufacturing and lowering costs.
- **High Bond Strength:** Delivers robust adhesion capable of withstanding physical stress and environmental changes, maintaining package integrity over long periods.

Siegwerk has embedded circular economy principles into the development of these products, considering material selection, production, and ultimate recyclability. This sets a new industry standard as demand for easily recyclable packaging solutions continues to grow.

Background & Context

Today's packaging industry is undergoing a significant transformation, driven by increasing consumer environmental awareness and tightening environmental regulations. Flexible packaging, while widely used for its convenience and material efficiency, has faced challenges regarding its recyclability. Cirkit Novaseal is developed to address this issue, helping manufacturers achieve their sustainability goals while still providing high-performance packaging solutions. As a global leader in printing inks and coatings, Siegwerk brings extensive expertise to this domain.

Strategic Significance & Outlook

The introduction of the Cirkit Novaseal heat seal lacquer portfolio marks a critical step in accelerating the transition towards sustainable flexible packaging. This technology is expected to be adopted in a wide range of product packaging, including food, beverages, pharmaceuticals, and personal care items, promoting the use of recyclable materials. Through this innovation, Siegwerk aims to support its customers' sustainability initiatives and strengthen its position as a leading provider of environmentally responsible packaging solutions. Further optimization of materials and development of products contributing to the circular economy are expected, driving the sustainable evolution of the entire packaging industry.

Source: https://www.sustainabilitymea.com/siegwerk-launches-cirkit-novaseal-heat-seal-lacquer-portfolio-for-fiber-based-flexible-packaging/

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Henkel and Hans Claussen to Showcase LOCTITE® Adhesives, Sealants, and Coatings for Demanding Marine Applications at Nor-Fishing 2026

Published Date unknown Henkel Adhesives Germany

OVERVIEW

Henkel, partnered with Hans Claussen, will present its LOCTITE® adhesives, sealants, and coatings portfolio at Nor-Fishing 2026. These solutions are specifically designed to meet the rigorous and demanding requirements of marine applications. The showcase aims to highlight advanced materials that ensure equipment reliability and durability while improving maintenance efficiency in harsh marine environments.

IN DEPTH

Key Findings

Henkel, in partnership with Hans Claussen, is set to exhibit a comprehensive portfolio of LOCTITE® adhesives, sealants, and coatings at Nor-Fishing 2026. This exhibition will highlight state-of-the-art solutions specifically engineered to meet the stringent requirements of marine applications, aiming to enhance equipment reliability, durability, and maintenance efficiency in harsh maritime environments.

Technical / Clinical Details

LOCTITE® products are designed to offer superior resistance to the unique challenges of marine environments, including saltwater corrosion, extreme temperature fluctuations, vibration, and high humidity. Key product categories and technologies to be showcased include:

- **Thread Sealants and Retaining Compounds:** Prevent leaks from threaded connections and loosening due to vibration in marine equipment. They offer excellent chemical and temperature resistance, with low breakaway torque options available for easy disassembly when maintenance is required.
- **Structural Adhesives:** Provide strong bonding for diverse substrates such as metals, composites, and plastics. This enables lightweight and durable joints, serving as an alternative to welding or mechanical fasteners, thereby reducing corrosion risks.
- **Gasketing and Sealing Materials:** Prevent fluid leakage between flanges in engine components, pumps, and valves, ensuring long-term sealing performance.
- **Wear-Resistant Coatings:** Protect surfaces exposed to abrasion and erosion, such as propeller shafts, pump housings, and parts of ship hulls, thereby extending equipment lifespan.

These products directly contribute to reducing downtime, lowering operational costs, and improving safety in the marine industry.

Background & Context

The marine industry, encompassing fisheries, shipping, offshore energy, and shipbuilding, requires equipment and structures to operate under severe environmental conditions. Factors such as corrosion, wear, and vibration are major causes of equipment failure and increased maintenance costs. Against this backdrop, high-performance adhesives, sealants, and coatings are indispensable for ensuring equipment longevity and reliability. Nor-Fishing serves as a crucial exhibition for the global fishing and marine industries, providing an ideal platform for Henkel to present its latest solutions.

Strategic Significance & Outlook

Henkel's LOCTITE® product range is expected to further strengthen its leadership in the marine industry by addressing diverse needs within this sector. Particularly, with growing emphasis on sustainability and tightening environmental regulations, the development of eco-friendly products that minimize impact on marine ecosystems will be crucial. Through innovative material solutions, Henkel is anticipated to contribute to improving the efficiency, safety, and environmental performance of marine equipment, supporting the sustainable development of the fishing and marine industries. Future advancements may also include integration with digital technologies for predictive maintenance and the development of easier-to-apply products.

Source: https://next.henkel-adhesives.com/no/en/events/loctite-and-hans-claussen-nor-fishing.html

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