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Aerospace Adhesives - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-06-01 | 120 pages | Mordor Intelligence

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Report description:

Aerospace Adhesives Market Analysis

The Aerospace Adhesives Market size is estimated at USD 0.9 billion in 2025, and is expected to reach USD 1.14 billion by 2030, at a CAGR of 4.71% during the forecast period (2025-2030). Sustained demand for lighter, more fuel-efficient aircraft is motivating producers to shift from mechanical fasteners toward high-performance bonding solutions that cut weight without compromising strength. Epoxy syntactic paste adhesives, such as PPG's PR-2940, illustrate how suppliers are adapting formulations to bond composite and metallic substrates under extreme operating loads. Defense budget growth in the United States and Europe, rising aircraft production backlogs at Airbus and Boeing, and the proliferation of automated dispensing systems on new production lines are further supporting volume growth. Meanwhile, volatile feedstock prices and evolving environmental rules in the United States and the European Union are prompting producers to accelerate innovation in water-borne and reactive chemistries. Strategic localization initiatives in the Middle East and the expansion of private space programs add incremental avenues for demand.

Global Aerospace Adhesives Market Trends and Insights

Increasing Penetration of Composites in Aircraft Manufacturing

Composites allow designers to cut airframe weight while boosting fatigue resistance, yet they demand adhesives that spread loads evenly and avert delamination. Hexcel now supplies integrated systems that pair HexPly prepregs with HexBond structural films to ensure chemical compatibility across the entire laminate. Airlines favor this pairing because it yields lighter wing and fuselage sections that maintain stiffness over long service lives. Adoption momentum is reinforced by OEM decisions to move composite part fabrication in-house, tightening collaboration with adhesive suppliers on cure profile alignment. Standardized data packs covering thermal expansion and moisture uptake help downstream MRO teams execute repairs more quickly, further lifting the aerospace adhesives market. /

Automated Robotic Bonding Lines to Meet Airbus and Boeing Ramp-Up Targets

To address record order backlogs, Airbus logged 8,658 aircraft in its 2024 book, manufacturers are deploying robots that meter, mix, and dispense adhesives at repeatable speeds exceeding manual capacity. Fraunhofer IFAM's adaptive application heads correct bead diameter in real time against contour variationsHenkel integrates machine vision to validate bead position before cure, limiting waste and rework. Shorter takt times feed directly into higher monthly jet output, strengthening the aerospace adhesives market outlook in the near term.

Chronic Volatility in Epoxy and Isocyanate Feedstock Supply Chains

Concentrated production sites in East Asia magnify disruption risks from plant outages and trade tensions. Dow is scaling bio-attributed feedstocks under its Renuva platform to ease dependency, yet aerospace qualification cycles delay rapid switchovers. Smaller producers lacking strategic inventories remain vulnerable to spot-price spikes that erode margins.

Other drivers and restraints analyzed in the detailed report include:

Increasing Government Spending on Defense in the United States / Expansion of Space Programs / Stringent REACH and CARB VOC Caps Limiting Solvent-Borne Formulations /

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

Solvent-borne grades captured 58% of the aerospace adhesives market share in 2024 thanks to long-term field data, robust peel strength, and broad operating-temperature envelopes. Their entrenched role in wing torsion boxes, nacelle structures, and fuel tank liners underpins steady demand despite rising compliance costs. Water-borne chemistries are closing the gap with 4.92% CAGR, aided by nanofiller reinforcements that elevate shear strength. Hybrid reactive systems combining epoxy and polyurethane blocks enable rapid cure without oven cycles, fitting smoothly into automated cell architectures.

Automation further changes the technology mix. Robotic spray and bead-dispense units deliver ultrathin, consistent wet-film builds, reducing solvent flash loss. However, capital investments favor plants with multi-program production runs, limiting immediate uptake in smaller facilities. Long term, regulatory alignment across jurisdictions is expected to normalize certification costs for next-generation aqueous and 100% solids technologies, thereby moderating solvent-borne dominance.

Epoxy formulations held a 50% share in 2024, reflecting their versatility in bonding metals, carbon fiber composites, and honeycomb cores. At a 5.01% CAGR to 2030, epoxy remains the engine of value creation in the aerospace adhesives market. Silicone and hybrid polysulfide-epoxy blends serve thermal management and fuel resistance niches, respectively. Polyurethanes retain relevance where toughness and low-temperature flexibility outweigh isocyanate restrictions, yet REACH training mandates put downward pressure on new program adoption.

Emergent chemistries focus on recyclability. Evonik's "debonding on demand" epoxies integrate cleavable linkages that activate under mild heat and catalyst triggers, enabling composite panel repair without destructive machining. Such features align with circular-economy targets and may unlock future revenue streams in reclaimed carbon fiber markets.

The Aerospace Adhesives Market Report Segments the Industry by Technology (Waterborne, Solvent-Borne, and Reactive), Resin Type (Epoxy, Polyurethane, Silicone, and Others), Function Type (Structural, and Non-Structural), End-Use (Original Equipment Manufacturer (OEM), and Maintenance Repair and Operations (MRO)), and Geography (Asia-Pacific, North America, Europe, South America, and Middle-East and Africa).

Geography Analysis

North America accounted for 40% of revenue in 2024 based on robust defense spending and concentrated OEM output. Capital projects such as PPG's forthcoming North Carolina plant reinforce regional self-sufficiency in aerospace coatings and sealants. Regulatory scrutiny from the California Air Resources Board nudges formulators toward low-VOC chemistries, yet aerospace programs often secure exemptions that grant transition breathing room.

Asia-Pacific is the fastest-growing region at a 5.12% CAGR through 2030. As exemplified by China's C919 narrow-body and India's AMCA fighter, Indigenous aircraft initiatives elevate local adhesive demand. Hexcel's technology displays at Aero India 2025, featuring rapid-cure prepregs paired with tailored adhesives, signals supplier commitment to support this expansion. Offset obligations tied to defense procurement further spur in-region production, while growing MRO clusters in Singapore and Malaysia provide aftermarket pull.

Europe maintains a strong footprint anchored by Airbus assembly lines in France, Germany, and Spain. The diisocyanates rule effective in 2023 accelerates the shift away from certain polyurethane systems, stimulating innovation in alternative epoxies and silane-terminated polymers. Public funding via the Circular Bio-based Europe Joint Undertaking channels EUR 211 million into bio-based materials research, with adhesives as a key focus area.

The Middle East and Africa represent emerging pockets of growth. Saudi Arabia's Vision 2030 drives investment in localized component manufacture, and the UAE's space ambitions expand demand for specialty high-temperature adhesives. Latin America sees moderate uptake as Embraer and regional MRO hubs in Mexico modernize production lines, though macro-economic constraints temper immediate expansion.

List of Companies Covered in this Report:

3M / Arkema / Ashland / Beacon Adhesives Inc. / Chemetall GmbH (BASF) / DELO Industrie Klebstoffe GmbH & Co. KGaA / Dymax / Flamemaster Corp. / Gurit Services AG / H.B. Fuller Company / Henkel AG & Co. KGaA / Hernon Manufacturing Inc / Hexcel Corporation / Huntsman International LLC. / Hybond / Hylomar Products / IPS Corporation / L&L Products / Master Bond Inc. / Parker Hannifin Corp / Parson Adhesives Inc. / Permabond LLC / PPG Industries Inc. / Sika AG / Solvay /

Additional Benefits:

The market estimate (ME) sheet in Excel format /
3 months of analyst support /

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