

Aerospace Adhesives & Sealants Market Expected to Reach USD 1.7 Billion by 2032, with a 5.1% CAGR | SNS Insider

Aerospace Adhesives and Sealants Market Expands as Lightweight Materials and Fuel Efficiency Propel Innovation in Aircraft Manufacturing.

AUSTIN, TX, UNITED STATES, January 22, 2025 /EINPresswire.com/ -- The Aerospace Adhesives & Sealants

Market was valued at USD 1.1 billion in 2023 and is expected to reach USD 1.7 billion by 2032, growing at a CAGR of 5.1% over the forecast period 2024-2032.



Driving Innovation and Sustainability: The Growing Role of Aerospace Adhesives and Sealants

The aerospace adhesives and sealants market are a critical segment of the aerospace industry, driven by the growing demand for lightweight and fuel-efficient aircraft. These specialized materials are designed to withstand extreme conditions, including high temperatures, pressure, and vibration, ensuring structural integrity and safety in aerospace applications. Key trends include the increasing adoption of advanced composite materials, which require high-performance adhesives and sealants for effective bonding. Additionally, the push for sustainable and eco-friendly solutions is fostering the development of low-VOC (volatile organic compound) and environmentally compliant products.

The market is experiencing robust growth due to the rising production of commercial aircraft to meet surging passenger traffic and the expansion of the defense sector. Technological advancements, such as the development of UV-curable and epoxy-based adhesives, are enhancing product performance and application efficiency. A significant increase in demand for adhesives in aircraft interiors, driven by the focus on passenger comfort and lightweight cabin designs. Furthermore, partnerships between manufacturers and aerospace companies are accelerating innovation, ensuring products meet stringent regulatory standards. This dynamic and innovation-driven market is set to play a pivotal role in shaping the future of the aerospace

industry.

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Major Players:

- Henkel AG & Co. KGaA (Loctite EA 9396, Loctite 7705)
- 3M (Scotch-Weld DP 460, Scotch-Weld DP 8405NS)
- PPG Industries Inc. (PPG PR-1422, PPG PR-1776)
- Huntsman International LLC. (Araldite 2011, Araldite 2021)
- Solvay Group (Cytec 5275-1, Cytec 9235)
- Master Bond Inc. (EP42HT-2, EP21AOHT)
- Beacon Adhesives (Beacon 1007, Beacon 1211)
- DuPont (Betamate 2090, Betaforce 2070)
- B. Fuller Company (Fuller OX-700, Fuller 2062)
- Scigrip Adhesives (SG-500, SG-700)
- Illinois Tool Works Inc. (ITW Devcon 10360, ITW Devcon 12540)
- LORD Corporation (Lord 400, Lord 302)
- Arkema (Kraton D1102, Kynar PVDF)
- Permabond (Aero 933, A1011)
- Sika AG (Sikaflex-295 UV, Sikaflex-552)
- ITW (Devcon 12450, Devcon 13380)
- Bostik (Bostik 1130, Bostik 2121)
- Royal Adhesives & Sealants (RC-1299, RC-2001)
- Dupont (Betaseal 1745, Betaforce 1080)
- Momentive (Silopren LSR 7000, RTV 118)

The aviation industry's focus on reducing emissions and costs has increased demand for lightweight, fuel-efficient aircraft, relying on adhesives and sealants to securely bond composite materials while ensuring durability and structural integrity.

The aviation industry's push to reduce carbon emissions and operational costs has driven the demand for lightweight and fuel-efficient aircraft. Lightweight composite materials, such as carbon fiber and advanced polymers, are increasingly used to achieve these goals due to their high strength-to-weight ratio. However, these materials require advanced joining techniques to maintain structural integrity and performance. Adhesives and sealants play a vital role in this process by securely bonding different components without adding significant weight. They also enhance durability by providing resistance to environmental factors such as temperature variations, moisture, and chemical exposure. Furthermore, adhesives distribute stress evenly across bonded surfaces, reducing the risk of structural failure and extending the aircraft's lifespan.

Market Segmentation and Sub-Segmentation Included are:

By Resin Type

- Epoxy
- Silicone
- Polyurethane
- Others

By Technology

- Solvent borne
- Water borne
- Others

By User Type

- Original Equipment Manufacturer
- Maintenance Repair and Operations

By End User

- Commercial
- Military
- General Aviation

Market Analysis: Dominance of Epoxy and Solvent-Borne Adhesives in Aerospace Applications

By Resin Type: Epoxy adhesives segment dominated with the market share over 48% in 2023. Their outstanding characteristics, such as superior thermal resistance, high compressive strength, and low elongation, make them particularly suited for aerospace applications. These adhesives are widely utilized for bonding composite materials, including large wing skins, sandwich panels, and ribs, due to their reliability and performance.

By Technology: Solvent-borne segment dominated with the market share over 44% in 2023, making them the leading choice in aerospace applications. Their popularity stems from exceptional bonding performance and versatility with different substrates. Despite the growing interest in environmentally friendly alternatives, such as water-borne adhesives, solvent-borne solutions maintain dominance because of their proven reliability and effectiveness in demanding conditions.

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North America Leads Aerospace Adhesives and Sealants Market with Over 40% Share in 2023

North America region dominated with the market share over 40% in 2023. This dominance can

be largely attributed to increased defense expenditures by the U.S. government, which drives the need for advanced bonding solutions in military aircraft. Additionally, the expanding commercial aviation industry, spurred by rising air travel and tourism, plays a significant role in the market's growth. The demand for lightweight and fuel-efficient aircraft designs has further propelled the adoption of adhesives and sealants. Furthermore, the increasing use of composite materials in both commercial and defense aircraft highlights North America's crucial influence on the aerospace sector. This region's strategic investments and advancements in aircraft technology ensure its leading position in the aerospace adhesives and sealants market, with the trend expected to continue in the coming years.

Recent Developments

- In August 2023: PPG Industries Invested USD 9.8 million to expand its adhesives and sealants product line at its Temple, Texas facility. This expansion is aimed at catering to the growing demand for high-performance bonding solutions in aerospace applications.
- In October 2023: Solvay Launched FusePly 250, a cutting-edge chemical bonding technology designed for high-temperature aerospace manufacturing. This product complements their existing FusePly 100 and addresses the need for durable bonding in extreme conditions.

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