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Aerospace Adhesives Market Forecasts to 2030 – Global Analysis By Resin Type (Epoxy, Polyurethane, Silicone, Acrylic, Cyanoacrylate and Other Resin Types), Form, Substrate, Function, Technology, Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Aerospace Adhesives Market is accounted for $1.01 billion in 2024 and is expected to reach $1.33 billion by 2030 growing at a CAGR of 4.8% during the forecast period. Aerospace adhesives are specialized bonding materials designed for use in the aerospace industry. These adhesives provide exceptional strength, durability, and resistance to extreme conditions, including high temperatures, pressure, and vibrations. Formulated from advanced materials like epoxies, polyurethanes, and silicones, aerospace adhesives ensure reliable performance while reducing the weight of the structures compared to traditional fasteners. They are critical in maintaining safety, efficiency, and structural integrity in demanding aerospace applications.

According to the Boeing's Commercial Market Outlook (CMO) report 2023, China is projected to become the largest domestic aviation market globally and will contribute to 20% of the global demand for airplanes by 2042.

Market Dynamics:

Driver:

Growing space exploration activities

Adhesives play a crucial role in bonding lightweight composite materials, structural

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components, and electronics, ensuring durability and reliability under extreme conditions, such as high radiation, temperature fluctuations, and vacuum environments. As space agencies and private companies ramp up satellite launches, deep-space missions, and space tourism, the need for specialized aerospace adhesives increases. These adhesives enable safer, more efficient designs and contribute to the growth of the space industry, thus expanding the market for aerospace adhesives.

Restraint:

Stringent regulatory compliance

Stringent regulatory compliance in aerospace adhesives is driven by the industry's high safety standards and the critical nature of aerospace components. Adhesives must meet rigorous specifications for performance, durability, and environmental safety to ensure passenger and aircraft safety. Compliance with regulations such as FAA, EASA, and ASTM increases product testing, certification, and quality control costs. This complexity can hinder market growth by raising development and manufacturing expenses for adhesive suppliers.

Opportunity:

Rising maintenance, repair, and overhaul (MRO) services

As the global fleet of aircraft grows and ages, the need for regular maintenance and component replacement intensifies. Adhesives play a key role in MRO activities, used for structural repairs, interior refurbishments, and sealing applications. With airlines and aerospace companies focusing on cost-effective, lightweight solutions for repairs, aerospace adhesives provide efficient alternatives to traditional fasteners and welding. Additionally, advancements in adhesive formulations ensure improved durability and performance, further boosting the demand in the MRO sector.

Threat:

Fluctuations in aerospace manufacturing trends

Fluctuations in aerospace manufacturing trends, driven by factors like changing air travel demand, economic cycles, and geopolitical instability, lead to unpredictable demand for aerospace adhesives. During periods of reduced aircraft production or halted projects, adhesive requirements decline, causing market instability. Additionally,

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reduced investments in new aircraft or delays in defense projects slow down the adoption of advanced adhesives, affecting overall market growth and hindering continuous innovation in the sector.

Covid-19 Impact

The covid-19 pandemic significantly impacted the aerospace adhesives market due to disruptions in global supply chains, reduced aircraft production, and a decline in air travel demand. Airline companies deferred or cancelled orders, leading to lower adhesive demand in new aircraft manufacturing. However, the market showed resilience with recovery efforts driven by the resurgence of air travel, increased focus on lightweight materials, and growing investments in space exploration post-pandemic.

The structural adhesives segment is expected to be the largest during the forecast period

The structural adhesives segment is predicted to secure the largest market share throughout the forecast period. Structural adhesives in aerospace are designed to provide strong, durable bonds for load-bearing components. They offer excellent resistance to environmental factors such as high temperatures, vibration, and stress. Their use also reduces the weight of aircraft compared to mechanical fasteners, improving fuel efficiency and supporting the industry's light weighting goals.

The commercial aviation segment is expected to have the highest CAGR during the forecast period

The commercial aviation segment is anticipated to witness the highest CAGR during the forecast period. In commercial aviation, aerospace adhesives are essential for assembling and maintaining aircraft. Adhesives offer lightweight solutions, improving fuel efficiency while maintaining high strength and durability. Additionally, aerospace adhesives play a crucial role in reducing maintenance downtime by providing quick repairs and seamless integration for modern aircraft designs.

Region with largest share:

Asia Pacific is expected to register the largest market share during the forecast period driven by increasing demand for commercial and military aircraft in countries like China, India, and Japan. The region's expanding aviation sector, coupled with rising air passenger traffic, fuels aircraft production and maintenance activities. Government

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investments in defense and aerospace infrastructure further boost market potential. Emerging economies, along with the growth of low-cost carriers and MRO services, solidify Asia-Pacific as a key growth region for aerospace adhesives.

Region with highest CAGR:

North America is expected to witness the highest CAGR over the forecast period fuelled by the region's established aerospace industry and high aircraft production rates. The presence of major aircraft manufacturers like Boeing and Lockheed Martin fosters steady demand for advanced adhesives. Robust defense budgets and growing investments in space exploration, including satellite and spacecraft projects, further fuel market growth. Technological advancements in adhesive formulations and a focus on lightweight materials for fuel efficiency bolster North America's market position.

Key players in the market

Some of the key players profiled in the Aerospace Adhesives Market include Henkel AG & Co. KGaA, 3M Company, Huntsman Corporation, H.B. Fuller Company, Arkema Group, Cytec Solvay Group, Avery Dennison Corporation, PPG Industries Inc., Hexcel Corporation, Lord Corporation, Ashland Global Holdings Inc., Permabond LLC, Dow Inc., Sika AG, Parson Adhesives Inc., Syensqo, Beacon Adhesives Inc., Master Bond Inc., Delo Industrial Adhesives and Scigrip Adhesives.

Key Developments:

In May 2024, Syensqo launched AeroPaste 1003, a new grade of its epoxy-based structural paste adhesives which already includes AeroPaste 1006 and 1100. This aerospace adhesive will offers great processing flexibility, making it ideal for targeted high production rates in markets such as Advanced Air Mobility, Commercial Aerospace and Defense.

In February 2024, PPG has added two adhesives to its aerospace portfolio: PPG PR-2940™ epoxy syntactic paste adhesive (ESPA) for bonding the internal structures of an aircraft; and PPG PR-2936™, an adhesive that incorporates the properties of a shim and sealant for attaching the outer skin of an aircraft to the internal structures.

Resin Types Covered:

Epoxy

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Polyurethane

Silicone

Acrylic

Cyanoacrylate

Other Resin Types

Forms Covered:

Liquid Adhesives

Paste Adhesives

Film Adhesives

Substrates Covered:

Metal

Composite

Plastic

Other Substrates

Functions Covered:

Structural Adhesives

Non-Structural Adhesives

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Technologies Covered:

- Solvent-Based
- Water-Based
- Hot Melt
- Reactive
- Other Technologies

Applications Covered:

- Interior
- Exterior

End Users Covered:

- Commercial Aviation
- Military Aviation
- General Aviation
- Spacecraft
- Other End Users

Regions Covered:

- North America
  - US

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- Canada
- Mexico

Europe

- Germany
- UK
- Italy
- France
- Spain
- Rest of Europe

Asia Pacific

- Japan
- China
- India
- Australia
- New Zealand
- South Korea
- Rest of Asia Pacific

South America

- Argentina
- Brazil

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Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2022, 2023, 2024, 2026, and 2030
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

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SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Contents

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5 GLOBAL AEROSPACE ADHESIVES MARKET, BY RESIN TYPE

5.1 Introduction
5.2 Epoxy
5.3 Polyurethane
5.4 Silicone
5.5 Acrylic
5.6 Cyanoacrylate
5.7 Other Resin Types

6 GLOBAL AEROSPACE ADHESIVES MARKET, BY FORM

6.1 Introduction
6.2 Liquid Adhesives
6.3 Paste Adhesives
6.4 Film Adhesives

7 GLOBAL AEROSPACE ADHESIVES MARKET, BY SUBSTRATE

7.1 Introduction
7.2 Metal
7.3 Composite
7.4 Plastic
7.5 Other Substrates

8 GLOBAL AEROSPACE ADHESIVES MARKET, BY FUNCTION

8.1 Introduction
8.2 Structural Adhesives
8.3 Non-Structural Adhesives

9 GLOBAL AEROSPACE ADHESIVES MARKET, BY TECHNOLOGY

9.1 Introduction
9.2 Solvent-Based
9.3 Water-Based
9.4 Hot Melt
9.5 Reactive

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13 KEY DEVELOPMENTS

14 COMPANY PROFILING

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List Of Tables

LIST OF TABLES

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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