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Airless Tires Market Forecasts to 2030 – Global Analysis By Type (Radial Airless Tires and Bias Airless Tires), Vehicle Type, Material, Sales Channel, Application and By Geography

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Abstracts

According to Stratistics MRC, the Global Airless Tires Market is accounted for $56.91 million in 2024 and is expected to reach $82.29 million by 2030 growing at a CAGR of 9.7% during the forecast period. Airless tires, also known as non-pneumatic tires (NPTs), are tires that do not require air to maintain their shape or support a vehicle's weight. Instead of being inflated with air, they use a solid or honeycomb-like structure made from rubber, plastic, or composite materials. This design eliminates the risk of punctures and blowouts, reducing maintenance and increasing durability.

According to Recycled Rubber Facts, recycling tires not just reduces the cost of raw materials and energy used in manufacturing but also brings down the carbon footprint of the tire manufacturing industry by 20%.

Market Dynamics:

Driver:

Rising demand for military & off-road vehicles

Airless tires eliminate the risk of flats, enhancing operational efficiency and reducing maintenance costs for defense, agriculture, and construction sectors. Military vehicles require robust, maintenance-free solutions to ensure reliability in combat zones, boosting airless tire adoption. Additionally, off-road vehicles used in mining, forestry, and industrial applications benefit from the superior traction and load-bearing capacity

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of airless tires, further accelerating market growth. This increasing demand encourages manufacturers to innovate and expand production.

Restraint:

Ride comfort & noise issues

Airless tires have ride comfort and noise issues due to their rigid structure and lack of air cushioning, which traditionally absorbs shocks and vibrations. Unlike pneumatic tires, airless designs often result in a stiffer ride, increasing road noise and reducing overall comfort. This makes them less appealing for passenger vehicles, where smoothness and quiet operation are key factors. These drawbacks hamper market growth by limiting consumer adoption and delaying widespread commercialization.

Opportunity:

Advancements in material science

Innovative materials like advanced polymers, composite rubber blends, and shape-memory alloys improve flexibility, heat dissipation, and load-bearing capacity. These developments address key challenges such as ride comfort and structural integrity, making airless tires more viable for commercial and passenger vehicles. Additionally, 3D printing and nanotechnology enable precise manufacturing and customization, reducing production costs. As material science evolves, airless tires become more practical, accelerating their adoption across various industries.

Threat:

Heat dissipation challenges

Airless tires face heat dissipation challenges because they lack the air-filled structure that traditionally helps cool pneumatic tires. Instead, their solid or honeycomb design traps heat, leading to increased thermal buildup during prolonged use. This can cause material degradation, reduced performance, and safety concerns, especially at high speeds. Poor heat management limits their application in passenger and commercial vehicles, restricting market adoption.

Covid-19 Impact:

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The covid-19 pandemic disrupted the airless tires market due to supply chain constraints, labor shortages, and reduced vehicle production. Lockdowns and economic slowdowns led to a decline in automotive and industrial vehicle demand, delaying R&D and commercialization efforts. However, post-pandemic recovery saw renewed interest, driven by sustainability trends and advancements in mobility solutions. Increased focus on durable, maintenance-free tires for military, construction, and agricultural sectors boosted market potential.

The passenger vehicles segment is expected to be the largest during the forecast period

The passenger vehicles segment is expected to account for the largest market share during the forecast period. Airless tires in passenger vehicles offer a puncture-proof, maintenance-free alternative to traditional pneumatic tires. They enhance safety by eliminating blowouts and reducing downtime. As technology advances, airless tires are expected to gain traction in urban mobility, EVs, and shared transportation services.

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

Over the forecast period, the rubber segment is predicted to witness the highest growth rate. Rubber airless tires are non-pneumatic tires made from durable rubber compounds, designed to eliminate punctures and reduce maintenance. They use a solid or honeycomb structure to provide support without air pressure. Advancements in rubber technology and sustainable materials are driving innovation, making them a viable option for specialized and future mobility solutions.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share due to increasing industrialization, infrastructure development, and demand for durable, maintenance-free tires in military, agriculture, and construction sectors. Countries like China, Japan, and India are investing in advanced mobility solutions, boosting R&D for airless tire technology. Rising vehicle production and the expansion of electric and autonomous vehicles further drive market growth.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR driven by strong demand in military, construction, and agricultural sectors, where

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durability and puncture resistance are crucial. The presence of major tire manufacturers, such as Michelin and Goodyear, accelerates research and development. Government initiatives promoting advanced mobility and defense applications further boost market growth, making North America a key region for airless tire innovation and adoption.

Key players in the market

Some of the key players in Airless Tires market include Michelin, The Goodyear Tire & Rubber Company, Continental AG, Bridgestone Corporation, Trelleborg AB, Hankook Tire & Technology Co., Ltd., Sumitomo Rubber Industries, Ltd., Toyo Tire Corporation, The Yokohama Rubber Co., Ltd., Amerityre Corporation, Tannus Ltd., Pirelli Tyre S.p.A., Cooper Tire & Rubber Company, Marathon Industries Inc., Sentry Tire and Rubber LLC, Cheng Shin Tire, Elastomeric Innovations, Smart Tire Company, Camso Inc. and Resilient Technologies, LLC.

Key Developments:

In July 2021, Goodyear introduced an airless tire and wheel assembly designed for autonomous vehicle transportation, specifically in urban settings. This NPT was first deployed with the Jacksonville Transportation Authority, marking a significant advancement in airless tire technology for autonomous applications.

Types Covered:

- Radial Airless Tires
- Bias Airless Tires

Vehicle Types Covered:

- Passenger Vehicles
- Commercial Vehicles
- Two-Wheelers
- Off-Road Vehicles

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- Military Vehicles
- Other Vehicle Types

Materials Covered:

- Rubber
- Plastic
- Composite Materials
- Other Materials

Sales Channels Covered:

- Original Equipment Manufacturers (OEMs)
- Aftermarket

Applications Covered:

- Automotive
- Construction & Industrial Equipment
- Agricultural Vehicles
- Aerospace
- Defense & Military
- Other Applications

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Regions Covered:

- North America
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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

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South America

Argentina

Brazil

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:

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customization options:

- Company Profiling
  - Comprehensive profiling of additional market players (up to 3)
  - 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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10 GLOBAL AIRLESS TIRES MARKET, BY GEOGRAPHY

11 KEY DEVELOPMENTS

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12 COMPANY PROFILING

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List Of Tables

LIST OF TABLES

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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