

**Bio-based Elastomers Market - Global Industry Size, Share, Trends, Opportunity & Forecast, Segmented By Product (Bio-based Thermoplastic, Bio-based Thermoset), By Application (Automotive, Footwear, Sports, Electrical & Electronics, Others), By Region & Competition, 2020-2030F**

Market Report | 2025-09-14 | 182 pages | TechSci Research

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**Report description:**

Market Overview

Global Bio-based Elastomers market was valued at USD 586.55 Million in 2024 and is expected to reach USD 1148.53 Million by 2030 with a CAGR of 11.85%. The Global Bio-based Elastomers Market is experiencing steady expansion, driven by a strategic shift across industries toward renewable and performance-efficient materials. Derived from feedstocks such as natural rubber, vegetable oils, starches, and bio-based monomers, bio-based elastomers are proving to be credible substitutes for petroleum-based counterparts offering comparable mechanical properties with a markedly lower environmental footprint. This transition is particularly pronounced in sectors like automotive, healthcare, packaging, and consumer goods, where material sustainability is becoming integral to product development and compliance frameworks.

The market is poised for sustained, innovation-driven growth, underpinned by regulatory mandates favoring bio-based inputs and a clear push from manufacturers to align with ESG and circular economy goals. Advancements in bio-polymer engineering, alongside increased scalability and supply chain investments, are accelerating the commercialization of high-performance bio-based elastomers. As a result, the segment is moving beyond early-stage adoption and is on track to become a core pillar within the global elastomer landscape particularly in high-growth, regulation-sensitive industries.

Key Market Drivers

Rapid Growth in End-Use Industries

The rapid expansion of end-use industries plays a pivotal role in driving the growth of the Global Bio-based Elastomers Market. As key sectors such as automotive, consumer goods, healthcare, industrial manufacturing, and packaging evolve toward more sustainable and performance-oriented solutions, the demand for eco-friendly elastomeric materials is surging. Bio-based

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elastomers are uniquely positioned to meet the rising expectations of these industries due to their renewable origin, environmental compatibility, and mechanical performance. The automotive industry is one of the largest consumers of elastomers globally, and it is undergoing a significant transformation driven by electrification, emission regulations, and sustainable manufacturing mandates. Bio-based elastomers are increasingly used in various vehicle components, including Seals and gaskets, Interior trims and soft-touch surfaces, Vibration dampers and bushings, EV-specific parts such as cable insulation and battery seals. Their lightweight nature and lower environmental footprint make them ideal substitutes for petroleum-based alternatives. As automakers strive to comply with CO<sub>2</sub> emission targets and improve the recyclability of vehicle parts, the demand for bio-based elastomers is accelerating. In the consumer goods segment including electronics, footwear, personal care, and household items there is growing consumer awareness and preference for products made from safe, sustainable materials. Bio-based elastomers are gaining traction due to their Soft-touch, flexible characteristics, Low toxicity and allergen-free properties, Biodegradability and renewable sourcing. Applications range from toothbrush grips and phone cases to soles of shoes and wearable device straps. Brands are increasingly incorporating bio-based elastomers to enhance product sustainability and appeal to environmentally conscious consumers.

The healthcare and medical devices industry demands materials that are not only high-performing but also non-toxic and safe for direct contact with the human body. Bio-based elastomers meet these stringent requirements while offering environmental benefits. Key applications include Medical tubing and catheters, Surgical gloves and personal protective equipment (PPE), Flexible packaging for pharmaceuticals. With rising investments in sustainable healthcare solutions and biodegradable medical supplies, this sector is emerging as a high-potential growth avenue for bio-based elastomer manufacturers. In industrial equipment, construction, and infrastructure development, bio-based elastomers are being adopted for their durability, resistance to chemicals and temperature extremes, and compliance with environmental standards. They are used in Gaskets and seals, Insulation materials, Expansion joints and flooring systems. As governments tighten green building regulations and industrial buyers prioritize environmentally responsible sourcing, bio-based elastomers are increasingly replacing synthetic rubber products.

#### Key Market Challenges

##### High Production Costs and Price Competitiveness

One of the most significant barriers to the growth of the bio-based elastomers market is the high cost of raw materials and production processes. Unlike conventional elastomers derived from fossil fuels which benefit from mature supply chains and large-scale infrastructure bio-based elastomers rely on relatively newer technologies and renewable feedstocks such as vegetable oils, starches, and biopolymers.

Expensive feedstock cultivation and processing, Lower economies of scale compared to petrochemical counterparts, Higher R&D and technology implementation costs. These factors lead to higher price points for bio-based elastomers, making them less attractive to cost-sensitive industries such as automotive, packaging, and consumer goods. Until production scales up and processing technologies become more economically efficient, pricing will remain a constraint on market penetration particularly in developing economies.

#### Key Market Trends

##### Integration of Digital Technologies in Sustainable Material Development

A major trend shaping the future of the market is the integration of digital technologies such as AI, machine learning, and digital twin simulations in the research, development, and optimization of bio-based elastomers. These tools are enabling faster, more cost-effective innovation in the following ways: Predictive modeling of polymer behavior and performance under various conditions, Accelerated material discovery through AI-driven formulation and testing, Digital prototyping for rapid product development and performance validation.

As a result, companies can reduce time-to-market, minimize experimental waste, and deliver high-performance elastomers tailored for specific applications. This trend represents a convergence of green chemistry and Industry 4.0, pushing the market into a more agile and data-driven era of innovation.

#### Key Market Players

- [ ] The Dow Chemical Company
- [ ] FKU Kunststoff GmbH
- [ ] Audia Elastomers

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- Eni S.p.A.
- Arkema
- Asahi Kasei Corporation
- KURARAY CO., LTD

Report Scope:

In this report, the Global Bio-based Elastomers Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

-□Bio-based Elastomers Market, By Product:

- o Bio-based Thermoplastic
- o Bio-based Thermoset

-□Bio-based Elastomers Market, By Application:

- o Automotive
- o Footwear
- o Sports
- o Electrical & Electronics
- o Others

-□Bio-based Elastomers Market, By Region:

- o North America
  - ? United States
  - ? Canada
  - ? Mexico
- o Europe
  - ? France
  - ? United Kingdom
  - ? Italy
  - ? Germany
  - ? Spain
- o Asia-Pacific
  - ? China
  - ? India
  - ? Japan
  - ? Australia
  - ? South Korea
- o South America
  - ? Brazil
  - ? Argentina
  - ? Colombia
- o Middle East & Africa
  - ? South Africa
  - ? Saudi Arabia
  - ? UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Bio-based Elastomers Market.

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Global Bio-based Elastomers market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

-□Detailed analysis and profiling of additional market players (up to five).

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