Biodegradable Polymers Market Report and Forecast 2025-2034

Market Report | 2025-07-28 | 155 pages | EMR Inc.

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Report description:

The global biodegradable polymers market value is expected to grow at a CAGR of 21.10% during the period 2025-2034.

Global Biodegradable Polymers Market Growth

Biodegradable polymers, often referred to as biopolymers, are typically sourced from various natural materials. These biopolymers, such as PLA, PHA, and starch, are widely used in plastics due to their lower environmental impact, which further fuels the biodegradable polymers industry growth.

Biodegradability is a feature of polymers independent of their origin and may be changed by making alterations at the molecular level. For example, some polymers are produced from petroleum feedstock but are biodegradable. Biopolymers from renewable feedstock are the most plentiful and commonly available biopolymers.

Global Biodegradable Polymers Market Analysis

Synthetic biopolymers are polymers modified from natural polymers or chemically synthesised from synthetic monomers such that they may undergo natural degradation, without leaving remains harmful to the environment. The biodegradable polymers market trends and dynamics are being driven by the advancement of technology, enabling the creation of synthetic biopolymers such as polycaprolactone (PCL), polyvinyl alcohol (PVOH), polylactic acid (PLA), polyglycolic acid (PGA), and polybutylene succinate (PBS).

The advantages of synthetic biopolymers include the potential to set up a sustainable industry and improvement in properties like high gloss, durability, clarity, flexibility, and tensile strength. These advantages are expected to contribute to the growth of the biodegradable polymers market.

Global Biodegradable Polymers Industry Outlook

According to the FAO (2022), in 2020, global agricultural land dedicated to permanent meadows and pastures amounted to 3,182,766.3 thousand hectares, while cropland covered 1,561,667.7 thousand hectares. In Africa, the agricultural landscape in 2020 included 842,097.5 thousand hectares for permanent meadows and pastures and 281,861.5 thousand hectares for cropland. In the Americas, 754,663.5 thousand hectares were used for permanent meadows and pastures, with cropland covering 367,297.3 thousand hectares. Asia reported 1,077,740.0 thousand hectares designated for permanent meadows and pastures and 591,266.3 thousand hectares for cropland in 2020.

Europe's agricultural land usage in 2020 comprised 173,300.0 thousand hectares for permanent meadows and pastures and 288,051.6 thousand hectares for cropland. In 2020, Oceania had 334,965.3 thousand hectares of permanent meadows and pastures, along with 33,191.0 thousand hectares of cropland, which boosted the demand for the biodegradable polymers market.

According to the Italian Trade Agency, in 2018, China imported packaging machinery from Italy valued at USD 196.2 million, while its exports to Italy amounted to USD 22.1 million. In 2019, imports surged to USD 275.5 million with a notable 40.4% growth rate. In 2020, imports were valued at USD 271.6 million, and exports were valued at USD 21.8 million, showing a 29.0% growth rate. The upward trend continued in 2021, with imports rising to USD 279.3 million and a growth rate of 2.8%. Exports also increased, reaching USD26.2 million, reflecting a 20.2% growth rate and further driving the biodegradable polymers demand growth.

According to the National Health Expenditure (NHE) historical data (1960-2021) and CMS projections (2022-2031), health spending in the United States as a percentage of GDP was 17.6% in 2018. This percentage remained consistent in 2019. In 2020, there was a notable increase, with health spending rising to 19.7% of GDP. CMS projections for 2031 indicate that health spending will represent 19.6% of GDP, further driving the biodegradable polymers industry revenue.

Increasing environmental concerns and regulations are driving demand for sustainable, biodegradable polymers, offering a lucrative biodegradable polymers market opportunity.

- Advances in polymer technology and material science are leading to improved performance and cost-effectiveness of biodegradable polymers.

- Governments and international organizations are providing incentives and support for the development and adoption of eco-friendly materials.

Production costs of biodegradable polymers can be significantly higher than traditional plastics, limiting market competitiveness.

- Market adoption is hindered by a lack of consumer and industry awareness regarding the benefits and applications of biodegradable polymers.

- Some biodegradable polymers may not meet the performance standards required for certain applications, impacting their market viability.

Rising consumer preference for sustainable products offers opportunities for growth in various industries such as packaging and agriculture.

- Continued research and development can lead to cost reductions and enhanced performance of biodegradable polymers.

- Collaborations between companies, research institutions, and governments can accelerate innovation and market penetration.

The market faces competition from conventional plastics and other sustainable alternatives, which may affect biodegradable polymers market demand.

- Variability in regulations across regions can complicate market entry and compliance for biodegradable polymers.

- Economic downturns or fluctuations in raw material prices can impact production costs and market stability.

Key Players in the Global Biodegradable Polymers Market and Their Key Initiatives

BASF SE

- Expanded production capacity for biodegradable polymers.

- Introduced ecovio M 2351, a new biodegradable polymer to meet the growing demand of the biodegradable polymers market.

NatureWorks LLC

- Opened new headquarters and advanced biopolymer research facility.

- Announced turn-key compostable coffee pod solution.

Novamont SpA

- Launched Mater-Biopolymer plant, boosting production capacity to capture the biodegradable polymers market opportunities.

- Partnered with Coldiretti, promoting sustainable agriculture.

Total Corbion PLA

- Launched a new 75,000-tonne PLA bioplastics plant in Thailand.

- Introduced a new range of high heat-resistant Luminy PLA resins.

Global Biodegradable Polymers Industry Segmentation

"Global Biodegradable Polymers Market Report and Forecast 2025-2034" offers a detailed analysis of the market based on the following segments:

Market Breakup by Type

- Starch-based Plastics
- Polylactic Acid (PLA)
- Polyhydroxy Alkanoates (PHA)
- Polyesters (PBS, PBAT, and PCL)
- Cellulose Derivatives

Market Breakup by Distribution Channel

- Agriculture
- Healthcare
- Textile
- Packaging
- Consumer Electronics
- Others

Market Breakup by Region

- North America
- Europe
- Asia Pacific
- Latin America
- Middle East and Africa

Biodegradable Polymers Market Share

Biodegradable polymers are used in surgical implants employed in vascular or orthopaedic surgery and plain membranes. Biodegradable polyesters are extensively employed as porous structures in tissue engineering owing to their good strength and adjustable degradation speed. Further, biodegradable polymers are employed as implantable matrices for controlled release of drugs within the body or as absorbable sutures.

In the automotive sector, PLA is mixed with fibres of kenaf to replace panels of car doors and dashboards. Starch-based polymers are used as additives in tire production to reduce rolling resistance, fuel consumption, and greenhouse gas emissions, further driving the growth of the biodegradable polymers industry.

Leading Companies in the Biodegradable Polymers Market

The companies produce bioplastics, specialising in crafting biopolymers from renewable plant sources. They emphasise sustainable solutions for packaging, textiles, and consumer products, spearheading innovation in the bioplastics sector.

- BASF SE

- NatureWorks LLC

- Novamont SpA

- Total Corbion PLA

- Rodenburg Biopolymers

- Biome Bioplastics Limited

- Others

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