

## **Sustainable Biopolymers: Global Markets**

Market Research Report | 2023-03-24 | 169 pages | BCC Research

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### **Report description:**

Description

Report Scope:

This report analyzes the global sustainable biopolymer market, based on segmentation of chemistry and application. These segmentations are further analyzed at global and regional levels.

The base year considered for analysis is 2021, while market estimates and forecasts are given from 2022 to 2027. The market estimates are only provided in terms of volume, kilotons and revenue in \$ millions.

The scope for biodegradable polymers -

Based on chemistry, the market is segmented into -

- Polybutylene adipate terephthalate (PBAT).
- Polybutylene succinate (PBS).
- Polylactic acid (PLA).
- Polyhydroxyalkanoates (PHA).
- Starch blends.
- Cellulose films.

Based on application, the market is segmented into -

- Flexible packaging.
- Rigid packaging.
- Agriculture.
- Consumer goods.

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- Coatings and adhesives.
- Fibers.
- Electronics and electricals.
- Building and construction.
- Automotive and transport.
- Others.

The scope for bio-based polymers -

Based on chemistry, the market is segmented into -

- Polylactic acid (PLA).
- Starch blend.
- Bio-polyethylene (bio-PE).
- Polyhydroxyalkanoates (PHA).
- Bio-polyamides.
- Bio-polyvinyl chloride (bio-PVC).
- Bio-polytrimethylene terephthalate (bio-PTT).
- Cellulosic.
- Bio-polypropylene (bio-PP).
- Others.

Based on application, the market is segmented into -

- Flexible packaging.
- Rigid packaging.
- Consumer goods.
- Fibers.
- Electronics and electricals.
- Building and construction.
- Automotive and transport.
- Others.

Report Includes:

- 63 data tables
- An up-to-date overview and analysis of the global market for sustainable biopolymers (including both the bio-based polymers and biodegradable polymers)
- Analyses of the global market trends, with historic market revenue data (sales figures) for 2021, estimates for 2022, forecasts for 2023, and projections of compound annual growth rates (CAGRs) through 2027
- Estimation of the actual market size and revenue forecast for both the biodegradable and bio-based polymers markets in value (USD millions) and volumetric (kilotons) terms, and their corresponding market share analysis based on chemistry, application, and region
- In-depth information (facts and figures) concerning the major factors influencing the progress of this market (benefits, and industry-specific challenges) with respect to specific growth trends, upcoming technologies, future prospects, and contributions to the overall market
- Highlights of emerging technology trends, opportunities and gaps estimating current and future demand for sustainable biopolymers, pricing and supply chain analysis, and the COVID-19 impact on this marketplace
- Analysis of the market opportunities with a holistic review of the Porter's Five Forces analysis and PESTLE analysis considering both micro- and macro- environmental factors prevailing in the entire bioplastics industry

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- Review of key recent patents granted related to biodegradable polymer technologies
- Identification of the major stakeholders and analysis of the competitive landscape based on recent market developments, segmental revenues, and company value share analysis
- Descriptive company profiles of the leading global players, including 3M Co., Amcor plc., Archer Daniels Midland Co. (ADM), BASF SE, Braskem, FKuR, PSM North America, and Toray Industries Inc.

## Executive Summary

### Summary:

Rising concern about the escalating price of fossil fuels and its impact on the environment has made it necessary to search for substitutes for petrochemical-based plastics. Biodegradable polymers comprise only one subcategory of degradable polymers and bio-resins. The ISO and the ASTM broadly define degradable polymers as, "?polymers that are designed to undergo a chemical change under specific conditions, resulting in a loss of some properties." Biodegradable polymers are designed to degrade via action of living organisms such as bacteria, fungi and algae. Bioplastics are polymers derived from bio-based sources. Bioplastic can be biodegradable or non-biodegradable and reduce dependence on fossil fuels.

A significant change is occurring in the global polymer industry. The demand for polymers derived from renewable resources and biodegradable polymers are growing. Due to rapid advancements in biotechnology, many bioplastics (such as polylactides and polyhydroxyalkanoates) have been developed.

In 2021, about REDACTED% of total annual crude oil consumption in the U.S. was used to produce plastic. With the price volatility of crude, the supply and economic stability of plastic packaging remains uncertain. Plastic packaging products are toxic to both the environment and human health, if not biodegradable. Non-biodegradable plastic packaging results in land and water clogs, degrading the environment health. Demand for bioplastics and biodegradable plastics are on the rise.

Bioplastic or green polymer packaging is material produced from biomass, is biodegradable or is both. Bioplastics are also produced from fossil-based raw materials provided that the end products are biodegradable. The market penetration of bioplastic materials has been substantially low in the last decade. Only REDACTED million tons of bioplastic material was produced in 2021, compared to REDACTED million tons of plastic material produced during the same period. With the growing availability of raw materials and diverging product portfolios of bioplastic and green polymer materials, demand is projected to be on the rise during the forecast period. Major development of biopolymer and green plastic is primarily expected in Europe, due to the growing importance of bio economics in the European Union. Europe is a major hub for the entire bioplastics industry; it ranks highest in research and development.

COVID-19 impacted demand for biopolymers by slowing R&D activities due to economic slowdown and restriction on employee work. The pandemic had a negative impact on the growth of biodegradable polymers, bioplastics and related end-use industries.

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3M

AG PROCESSING INC.

AMCOR PLC

ARCHER DANIELS MIDLAND CO. (ADM)

AMERICAN PACKAGING CORP.

ANCHOR PACKAGING

BASF SE

BERRY GLOBAL INC.

BIOTEC BIOLOGISCHE NATURVERPACKUNGEN GMBH & CO. KG.

BRASKEM

CHIMEI

CARGILL INC.

COSMO FILMS LTD.

ER CARPENTER CO.

ECOLAB INC.

FKUR

FORMOSA PLASTICS GROUP

FUTURE FOAM INC.

FILMQUEST GROUP INC.

GREINER PACKAGING INTERNATIONAL

GASCOGNE FLEXIBLE

INTEPLAST GROUP

KANEKA TEXAS CORP.

NOVOMER INC.

NOVOLEX HOLDINGS INC.

NATUREWORKS LLC

PLASTOMER CORP.

PACTIV INC.

PRIMIENT COVATION LLC

PRINTPACK INC.

PSM NORTH AMERICA

SAINT-GOBAIN

SEALED AIR CORP.

SWISS PAC

TORAY INDUSTRIES, INC.

TEIJIN FIBERS LTD.

TEKNI-PLEX INC.

UBE AMERICA INC.

UNITIKA LTD.

WIPAK GROUP

WINPAK PORTION PACKAGING

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ZEON CORP.

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10.1 Acronyms

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