

Bio-degradable Polymers - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Bio-degradable Polymers Market size is estimated at 0.86 million tons in 2025, and is expected to reach 2.24 million tons by 2030, at a CAGR of 21.1% during the forecast period (2025-2030).

Bio-degradable polymers are advantageous over non-bio-degradable polymers as they are less toxic, have lesser side effects, help to improve patient compliance, and maintains the stabilization of the drug. Therefore, temporary halt in the global production of industrial and consumer goods had repercussion not only on the demand, but also production of bio-degradable polymers. Such market scenario being witnessed in 2020 is indicated to trim the global economic growth by 3% to 6% during the year.

Key Highlights

- A major factor driving the market studied is the favorable government policies which promote bio-plastics. Additionally, tremendous usage in flexible packaging is likely to favor the market growth.
- On the flipside, the higher price of bio-degradable polymers compared to petroleum-based polymers is expected to hinder the market growth.
- Bio-degradable plastics are increasingly finding usage in niche applications, such as in shale gas industry (where they are used during hydro-fracking), hygiene products, and in fishing gears, among other applications, these are projected to act as an opportunity for the market in future.

Bio-degradable Polymers Market Trends

Increasing Demand from the Packaging Industry

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- Bio-degradable polymers are used in both flexible and rigid packaging applications. Bio-degradable polymers are used for wrapping organic food, as well as for premium and branded products with particular requirements.
- According to European Bioplastics, global production capacities of bioplastics (of which bio-degradable polymers accounted for around 40% of the market) are expected to increase from 2.2 million tons in 2022 to 6.3 million tons in 2027. Around 50% of the volume is used for the packaging market, which is the biggest market segment within the bioplastics industry.
- In rigid packaging applications, bio-degradable polymers are used in cosmetics packaging, such as creams and lipsticks, as well as beverage bottles and many more. PLA is widely used in rigid packaging applications.
- Biodegradability is an important component of food packaging for perishables. Flexible packaging solutions, such as films and trays, are particularly suitable for fresh produce, such as fruit and vegetables, as they enable longer shelf life.
- In Europe and North America, the consumption of bio-degradable polymers is increasing, owing to stringent regulations by the government to ban the usage of petroleum-based plastics, coupled with the increasing usage of bio-degradable polymers in rigid packaging for bottles in these regions.
- The growth in the packaging industry in developing regions, such as Asia-Pacific, South America, and the Middle East, is expected to increase over the forecast period due to the improving food packaging standards of various food and safety organizations in these regions. In turn, it is expected to propel the growth of the bio-degradable polymers market during the forecast period.
- Owing to the aforementioned factors, the bio-degradable polymers market is expected to grow with the increasing demand from the packaging industry during the forecast period.

China to Grow at a Fastest Rate in Asia Pacific Region

- In Asia-Pacific, China is the largest economy in terms of GDP. Chinese plastics manufacturers that account for almost 29% of the global plastic production are focusing on the increased use of corn, sugar, and other crops to develop biodegradable plastics as concerns about environmental pollution have encouraged directives from Beijing and the prospects of a ban on conventional plastics single-use non-biodegradable plastics, such as cutlery, plastic bags, and packaging.
- According to Interpak 2023, China holds a significant share of the global flexible packaging market. The average annual growth of the flexible packaging market in the country until 2022 was around 8%, whereas the global annual average growth rate was around 4.3%. This growth in the packaging industry is mainly driven by dynamic economic development, accelerating urbanization, as well as improvement in people's quality of life. Consumers are shifting toward more safe, convenient, unique, and eco-friendly packaging.
- Consumers take more interest in the materials used for packaging and the impact on their health and environment. Therefore, companies are focusing on transforming biodegradable plastic packaging.
- Food and beverage packaging is the major driver boosting the demand for bio-degradable polymers. As per Interpak 2023, the Chinese total retail trade of foodstuff packaging in 2023 reached 447,066 million units.
- Also, China has a significant presence in producing considerable quantities of plastics, generating revenues from trade exports, thereby creating significant production capacities for various packaging companies. According to International Trade Center (ITC), in 2021, China exported plastics and articles valued at about USD 131.07 billion, a 36% rise in exports from the previous year, valued at around USD 96.38 billion.
- Plastic film mulching in the Chinese agriculture industry has played a vital role, owing to its effects on soil warming, moisture conservation, and weed control. Standards for using plastic films have been improved, and appropriate techniques are being developed for multipurpose plastic film, mechanization of residue recycling technology, and the replacement of polythene with biodegradable polymer films. This biodegradable plastic film mulching technology has helped in increasing 20-50% of grain crop yields and plays a key role in ensuring the supply of agricultural goods in the country.

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- Thus, the market for biodegradable polymers in China is expected to experience growth during the forecast period owing to such trends in the end-user industries.

Bio-degradable Polymers Industry Overview

The global market for biodegradable polymers is partly consolidated, with a chunk of the market in the hands of the market leader in each product segment. Major companies holding a significant market share (not in any particular order) are NatureWorks LLC, Novamont S.p.A, BASF SE, Total Corbion PLA, and Eastman Chemical Company, among others.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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