

Biodegradable Plastic Market Size, Share, Trends and Forecast by Type, End Use, and Region, 2025-2033

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Report description:

The global biodegradable plastic market size was valued at USD 5.69 Billion in 2024. Looking forward, IMARC Group estimates the market to reach USD 11.15 Billion by 2033, exhibiting a CAGR of 7.38% during 2025-2033. Europe dominated the market in 2024. The escalating environmental concerns among consumers, increasing demand for eco-friendly packaging, and the implementation of favorable government policies represent some of the key factors driving the biodegradable plastic market share.

The market is expanding due to a mix of environmental, regulatory, and consumer-driven factors. Governments worldwide are enforcing bans and restrictions on traditional single-use plastics, pushing industries to adopt eco-friendly alternatives. Rising awareness about plastic pollution and climate change is encouraging consumers and businesses to shift toward sustainable packaging solutions. Advances in bio-based polymers, such as polylactic acid (PLA) and polyhydroxyalkanoates (PHA), are making biodegradable plastics more versatile and suitable for a wider range of applications, from food packaging to agriculture and textiles. Corporate sustainability goals and commitments to reduce carbon footprints are accelerating adoption, especially among global brands. At the same time, improved production efficiency and declining costs are helping biodegradable plastics compete more directly with conventional plastics.

In the United States, the launch of a new biodegradable plastic chain line signals growing adoption of durable yet degradable solutions. With industries seeking landfill-friendly alternatives, such innovations highlight how material science is adapting to regulatory pressure and consumer demand, strengthening the market for practical, environmentally responsible packaging and product applications. For instance, in February 2025, Verde Bioresins and Mr. Chain launched EarthMade, a biodegradable plastic chain line using Polyethylene resin. The products maintain traditional durability, while landfill is degradable. Announced in February 2025, the initiative met demand for sustainable materials across industries and followed Verde's USD 323 Million merger with EV charger maker Nxu Inc.

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Growing Demand for Sustainable Packaging

Biodegradable plastic market trends reflect that global attitudes toward single-use plastics are shifting rapidly. A recent international survey revealed that eight in ten people support cutting back plastic production, signaling strong momentum toward alternatives. This shift is fueling interest in biodegradable materials, particularly in packaging where consumer expectations are highest. Businesses are being pressured to adopt solutions that align with environmental goals, and governments are responding with stricter policies. Producers of biodegradable plastics now find themselves in a favorable position, with rising adoption across food, retail, and consumer goods sectors. The market is no longer driven solely by compliance; it's increasingly shaped by consumer preference, which is accelerating investment in innovation and scaling of eco-friendly products. For example, a recent survey conducted by Greenpeace International shows that 8 out of 10 people globally support reducing plastic production.

Push toward Eco-Friendly Materials

The scale of plastic waste pollution has reached a critical level, with nearly 19 Million Tons leaking into the environment annually, according to global estimates. This has intensified calls for sustainable packaging and viable alternatives that reduce environmental damage. Biodegradable plastics are gaining traction as a practical solution, offering reduced persistence in landfills and oceans compared to conventional plastics. Governments, industries, and consumers are aligning toward stronger adoption of eco-conscious products, creating opportunities for innovation and large-scale investment in biodegradable options. The packaging sector, in particular, is expected to be a major driver as brands aim to meet rising consumer expectations and comply with tightening regulations. The biodegradable plastic market forecast predicts a decisive move toward cleaner and more responsible material use. For instance, according to the World Economic Forum, approximately 19 Million Tons of plastic waste are leaked into the environment each year, underlining the urgent need for sustainable packaging and material alternatives.

Policy Shifts Encouraging Greener Packaging

Wider adoption of plastic bag bans is showing visible results in reducing waste along coastlines, shaping the biodegradable plastic market outlook. As conventional plastics face mounting restrictions, industries are exploring alternatives that align with both environmental goals and regulatory standards. The packaging sector is responding quickly, with biodegradable materials emerging as a practical solution to balance functionality with environmental responsibility. Consumer awareness is also playing a role, as people increasingly favor products and practices that contribute to cleaner communities and ecosystems. These shifts illustrate how legislative measures can accelerate the move toward responsible material choices, encouraging innovation and investment in biodegradable plastics that are better suited to long-term environmental priorities. For example, a new analysis by Ocean Conservancy scientists shows a 29% reduction in plastic grocery bags found on beaches following an increase in statewide plastic bag bans.

Biodegradable Plastic Industry Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the global biodegradable plastic market, along with forecasts at the global, regional, and country levels from 2025-2033. The market has been categorized based on type and end use.

Analysis by Type:

-□ Starch-based

-□ PLA

-□ PBS

-□ PBAT

-□ PHA

-□ Others

Starch-based stood as the largest type in 2024 due to its cost-effectiveness, abundant availability, and eco-friendly profile. Starch is derived from renewable sources like corn, potatoes, and cassava, making it a sustainable alternative to petroleum-based plastics. It is easily processed, blends well with other biopolymers, and degrades naturally, reducing landfill waste and environmental impact. Growing consumer demand for sustainable packaging, along with regulations restricting single-use plastics, has accelerated adoption. Starch-based plastics also find wide use in packaging, agricultural films, and disposable products, which fuels biodegradable plastic market growth. With industries and governments pushing for reduced carbon footprints, starch-based

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biodegradable plastics are increasingly preferred, making this segment one of the most influential forces driving the overall biodegradable plastic market forward.

Analysis by End Use:

- Packaging
- Agriculture
- Consumer Goods
- Others

Packaging led the market in 2024, fueled by rising demand for sustainable alternatives to conventional plastics. With growing environmental concerns and strict regulations on single-use plastics, industries are shifting toward biodegradable options for food packaging, shopping bags, containers, and wrapping materials. Biodegradable plastics not only reduce dependency on fossil fuels but also address waste management challenges by offering faster decomposition. Consumer preference for eco-friendly products has further accelerated this transition, particularly in the food and beverage industry, where safe, lightweight, and durable packaging is essential. Large retailers and brands are increasingly adopting biodegradable packaging to strengthen their sustainability commitments. This widespread adoption in packaging applications positions the segment as one of the strongest growth drivers in the global biodegradable plastic market.

Regional Analysis:

- North America
 - o□United States
 - o□Canada
- Asia Pacific
 - o□China
 - o□Japan
 - o□India
 - o□South Korea
 - o□Australia
 - o□Indonesia
 - o□Others
- Europe
 - o□Germany
 - o□France
 - o□United Kingdom
 - o□Italy
 - o□Spain
 - o□Russia
 - o□Others
- Latin America
 - o□Brazil
 - o□Mexico
 - o□Others
- Middle East and Africa

In 2024, Europe accounted for the largest market share, supported by strict environmental regulations and proactive government policies aimed at reducing plastic waste. The European Union has enforced bans and restrictions on single-use plastics, which have significantly boosted demand for biodegradable alternatives in packaging, agriculture, textiles, and consumer goods. Countries like Germany, Italy, France, and the UK are leading in adopting sustainable practices, supported by advanced recycling infrastructure and strong awareness among consumers regarding eco-friendly products. Growing investments in research and development, along with financial incentives for green manufacturing, have further encouraged companies to expand production. The region's retail and food service industries are also shifting toward biodegradable packaging, reinforcing Europe's role as the

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global leader in this market.

Key Regional Takeaways:

United States Biodegradable Plastic Market Analysis

The United States biodegradable plastic market is witnessing robust growth, driven by increasing consumer preference for sustainable alternatives amid growing environmental consciousness. A significant contributor to this momentum is the heightened demand from the packaging sector, particularly in food service and retail, where eco-friendly materials are being prioritized to reduce landfill waste. According to the U.S. Environmental Protection Agency (EPA), an estimated USD 28 Billion is needed to modernize recycling systems and divert more packaging materials, highlighting the urgent need for scalable biodegradable solutions. The adoption of compostable plastics in municipal waste management programs is also gaining traction, encouraging further market penetration. Additionally, institutional buyers and educational institutions are increasingly adopting biodegradable materials for everyday use, reinforcing demand. Advanced material innovation and the integration of bioplastics in agricultural films, mulch, and nursery products are expanding application scope. Favorable federal initiatives promoting green materials in public procurement policies are acting as catalysts for adoption across various industries. Moreover, the rise of home composting trends and eco-conscious product labeling has led to greater market visibility and consumer engagement. Rapid digital transformation in retail and e-commerce is also enabling sustainable brands to scale faster through direct-to-consumer models.

Europe Biodegradable Plastic Market Analysis

The Europe biodegradable plastic market is expanding steadily, supported by stringent environmental regulations and the EU's ambitious sustainability targets. The region's focus on transitioning to a circular economy has spurred investment in bio-based alternatives, particularly in sectors like agriculture, textiles, and electronics. Notably, the European Commission reports that 40% of plastics used in the EU are in packaging, underscoring the critical role of biodegradable alternatives in reducing overall plastic dependency. Rising public procurement of environmentally sustainable materials has incentivized industries to adopt biodegradable plastics across a broader range of applications. Educational campaigns and labeling systems that highlight compostability and biodegradability are playing a critical role in shaping consumer behavior. High urban waste generation rates have driven innovation in biodegradable waste collection bags and food packaging solutions. Public-private collaborations are promoting EU-standard industrial composting formulations and integrating biodegradable plastics into tourism applications to reduce plastic pollution in natural parks and coastal areas.

Asia Pacific Biodegradable Plastic Market Analysis

The biodegradable plastic market in Asia Pacific is experiencing accelerated growth, propelled by increasing awareness of marine pollution and a growing shift toward sustainable living practices. Urban expansion and changing consumption patterns have led to higher demand for biodegradable packaging in personal care and household products. According to the India Brand Equity Foundation (IBEF), the Indian e-commerce packaging market alone is projected to reach USD 15.8 Billion by 2030, creating immense opportunity for biodegradable plastic integration. Government-led initiatives promoting green materials in public transportation and infrastructure projects are also influencing market trends. Furthermore, the rise of zero-waste movements across metropolitan areas is increasing the popularity of biodegradable alternatives among younger populations. Seasonal agricultural cycles and the need for efficient crop management are driving adoption in farming applications. In addition, educational institutions and event organizers are opting for compostable materials to minimize their ecological impact.

Latin America Biodegradable Plastic Market Analysis

In Latin America, the biodegradable plastic market is gaining momentum due to growing environmental advocacy and the increasing adoption of sustainable consumption patterns. The region's vibrant agricultural sector is embracing biodegradable solutions in mulch films and produce packaging, enhancing ecological farming practices. According to the World Wide Fund, the transition to more sustainable materials from 2025 to 2040 could reduce plastic waste by 8.2 Million Tons and potentially boost GDP by USD 81 Million, underlining the long-term economic and ecological benefits of this shift. Shifts in lifestyle habits, particularly in urban centers, are encouraging demand for eco-conscious products in retail and food delivery services. Public awareness campaigns, educational institutions, and hospitality venues are promoting sustainable alternatives to conventional plastics, with modern waste management systems expanding opportunities for industrial composting.

Middle East and Africa Biodegradable Plastic Market Analysis

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The Middle East and Africa biodegradable plastic market is gaining momentum as regional governments and industries intensify their focus on sustainability and waste reduction. A major driver is the Saudi Green Initiative, under which the Kingdom has pledged an investment of USD 26.7 Billion by 2035 to ensure that more than 90% of waste generated is diverted from landfills. This ambitious commitment is expected to create significant opportunities for the adoption of biodegradable plastics across packaging, agriculture, and waste management solutions, reducing reliance on traditional plastics and supporting a circular economy. Saudi Arabia is embracing biodegradable plastics in water conservation, desert agriculture, construction, hospitality, and event planning, driven by community-led clean-up campaigns and sustainable urban development initiatives.

Competitive Landscape:

The biodegradable plastic market is witnessing steady activity across product launches, collaborations, and government support. New packaging solutions made from corn starch, PHA, and agricultural waste are being introduced, with research institutions partnering with industry players to scale production. Governments in several regions are tightening regulations on single-use plastics and offering incentives for eco-friendly alternatives, encouraging adoption. Funding and R&D are also growing, especially in areas like compostable food packaging and fiber-reinforced bioplastics. Among these trends, the most common practices today are product launches backed by R&D, coupled with supportive government initiatives, as companies look to meet rising demand for sustainable packaging and comply with stricter environmental regulations.

The report provides a comprehensive analysis of the competitive landscape in the biodegradable plastic market with detailed profiles of all major companies, including:

- BASF SE
- Biome Technologies plc
- Bio-on S.p.A.
- Corbion N.V.
- Danimer Scientific
- Eastman Chemical Company
- Mitsubishi Chemical Corporation
- NatureWorks LLC (Cargill Incorporated)
- Novamont S.p.A.
- Plantic Technologies Limited (KURARAY CO. LTD.)
- Toray Industries Inc.
- Total Corbion PLA

Key Questions Answered in This Report

- 1.How big is the biodegradable plastic market?
- 2.What is the future outlook of biodegradable plastic market?
- 3.What are the key factors driving the biodegradable plastic market?
- 4.Which region accounts for the largest biodegradable plastic market share?
- 5.Which are the leading companies in the global biodegradable plastic market?

Table of Contents:

- 1 Preface
- 2 Scope and Methodology
 - 2.1 Objectives of the Study
 - 2.2 Stakeholders
 - 2.3 Data Sources
 - 2.3.1 Primary Sources
 - 2.3.2 Secondary Sources

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- 2.4 Market Estimation
 - 2.4.1 Bottom-Up Approach
 - 2.4.2 Top-Down Approach
- 2.5 Forecasting Methodology
- 3 Executive Summary
- 4 Introduction
 - 4.1 Overview
 - 4.2 Key Industry Trends
- 5 Global Biodegradable Plastic Market
 - 5.1 Market Overview
 - 5.2 Market Performance
 - 5.3 Impact of COVID-19
 - 5.4 Market Forecast
- 6 Market Breakup by Type
 - 6.1 Starch-based
 - 6.1.1 Market Trends
 - 6.1.2 Market Forecast
 - 6.2 PLA
 - 6.2.1 Market Trends
 - 6.2.2 Market Forecast
 - 6.3 PBS
 - 6.3.1 Market Trends
 - 6.3.2 Market Forecast
 - 6.4 PBAT
 - 6.4.1 Market Trends
 - 6.4.2 Market Forecast
 - 6.5 PHA
 - 6.5.1 Market Trends
 - 6.5.2 Market Forecast
 - 6.6 Others
 - 6.6.1 Market Trends
 - 6.6.2 Market Forecast
- 7 Market Breakup by End Use
 - 7.1 Packaging
 - 7.1.1 Market Trends
 - 7.1.2 Market Forecast
 - 7.2 Agriculture
 - 7.2.1 Market Trends
 - 7.2.2 Market Forecast
 - 7.3 Consumer Goods
 - 7.3.1 Market Trends
 - 7.3.2 Market Forecast
 - 7.4 Others
 - 7.4.1 Market Trends
 - 7.4.2 Market Forecast
- 8 Market Breakup by Region
 - 8.1 North America

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- 8.1.1 United States
 - 8.1.1.1 Market Trends
 - 8.1.1.2 Market Forecast
- 8.1.2 Canada
 - 8.1.2.1 Market Trends
 - 8.1.2.2 Market Forecast
- 8.2 Asia-Pacific
 - 8.2.1 China
 - 8.2.1.1 Market Trends
 - 8.2.1.2 Market Forecast
 - 8.2.2 Japan
 - 8.2.2.1 Market Trends
 - 8.2.2.2 Market Forecast
 - 8.2.3 India
 - 8.2.3.1 Market Trends
 - 8.2.3.2 Market Forecast
 - 8.2.4 South Korea
 - 8.2.4.1 Market Trends
 - 8.2.4.2 Market Forecast
 - 8.2.5 Australia
 - 8.2.5.1 Market Trends
 - 8.2.5.2 Market Forecast
 - 8.2.6 Indonesia
 - 8.2.6.1 Market Trends
 - 8.2.6.2 Market Forecast
 - 8.2.7 Others
 - 8.2.7.1 Market Trends
 - 8.2.7.2 Market Forecast
- 8.3 Europe
 - 8.3.1 Germany
 - 8.3.1.1 Market Trends
 - 8.3.1.2 Market Forecast
 - 8.3.2 France
 - 8.3.2.1 Market Trends
 - 8.3.2.2 Market Forecast
 - 8.3.3 United Kingdom
 - 8.3.3.1 Market Trends
 - 8.3.3.2 Market Forecast
 - 8.3.4 Italy
 - 8.3.4.1 Market Trends
 - 8.3.4.2 Market Forecast
 - 8.3.5 Spain
 - 8.3.5.1 Market Trends
 - 8.3.5.2 Market Forecast
 - 8.3.6 Russia
 - 8.3.6.1 Market Trends
 - 8.3.6.2 Market Forecast

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- 8.3.7 Others
 - 8.3.7.1 Market Trends
 - 8.3.7.2 Market Forecast
- 8.4 Latin America
 - 8.4.1 Brazil
 - 8.4.1.1 Market Trends
 - 8.4.1.2 Market Forecast
 - 8.4.2 Mexico
 - 8.4.2.1 Market Trends
 - 8.4.2.2 Market Forecast
 - 8.4.3 Others
 - 8.4.3.1 Market Trends
 - 8.4.3.2 Market Forecast
- 8.5 Middle East and Africa
 - 8.5.1 Market Trends
 - 8.5.2 Market Breakup by Country
 - 8.5.3 Market Forecast
- 9 SWOT Analysis
 - 9.1 Overview
 - 9.2 Strengths
 - 9.3 Weaknesses
 - 9.4 Opportunities
 - 9.5 Threats
- 10 Value Chain Analysis
- 11 Porters Five Forces Analysis
 - 11.1 Overview
 - 11.2 Bargaining Power of Buyers
 - 11.3 Bargaining Power of Suppliers
 - 11.4 Degree of Competition
 - 11.5 Threat of New Entrants
 - 11.6 Threat of Substitutes
- 12 Price Analysis
- 13 Competitive Landscape
 - 13.1 Market Structure
 - 13.2 Key Players
 - 13.3 Profiles of Key Players
 - 13.3.1 BASF SE
 - 13.3.1.1 Company Overview
 - 13.3.1.2 Product Portfolio
 - 13.3.1.3 Financials
 - 13.3.1.4 SWOT Analysis
 - 13.3.2 Biome Technologies plc
 - 13.3.2.1 Company Overview
 - 13.3.2.2 Product Portfolio
 - 13.3.2.3 Financials
 - 13.3.3 Bio-on S.p.A.
 - 13.3.3.1 Company Overview

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- 13.3.3.2 Product Portfolio
- 13.3.4 Corbion N.V.
 - 13.3.4.1 Company Overview
 - 13.3.4.2 Product Portfolio
 - 13.3.4.3 Financials
- 13.3.5 Danimer Scientific
 - 13.3.5.1 Company Overview
 - 13.3.5.2 Product Portfolio
- 13.3.6 Eastman Chemical Company
 - 13.3.6.1 Company Overview
 - 13.3.6.2 Product Portfolio
 - 13.3.6.3 Financials
 - 13.3.6.4 SWOT Analysis
- 13.3.7 Mitsubishi Chemical Corporation
 - 13.3.7.1 Company Overview
 - 13.3.7.2 Product Portfolio
 - 13.3.7.3 Financials
 - 13.3.7.4 SWOT Analysis
- 13.3.8 NatureWorks LLC (Cargill Incorporated)
 - 13.3.8.1 Company Overview
 - 13.3.8.2 Product Portfolio
- 13.3.9 Novamont S.p.A.
 - 13.3.9.1 Company Overview
 - 13.3.9.2 Product Portfolio
- 13.3.10 Plantic Technologies Limited (KURARAY CO. LTD.)
 - 13.3.10.1 Company Overview
 - 13.3.10.2 Product Portfolio
- 13.3.11 Toray Industries Inc.
 - 13.3.11.1 Company Overview
 - 13.3.11.2 Product Portfolio
 - 13.3.11.3 Financials
 - 13.3.11.4 SWOT Analysis
- 13.3.12 Total Corbion PLA
 - 13.3.12.1 Company Overview
 - 13.3.12.2 Product Portfolio

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