

Compostable E-commerce Packaging Market Forecasts to 2034 – Global Analysis By Material Type (Polylactic Acid (PLA), Polyhydroxyalkanoate (PHA), Starch Blends, Paper & Paperboard, Wheat Straw & Bamboo Fiber, Other Material Types), Packaging Format, End User, Distribution Channel and By Geography

<https://marketpublishers.com/r/C02080E20B45EN.html>

Date: June 2026

Pages: 200

Price: US\$ 4,150.00 (Single User License)

ID: C02080E20B45EN

Abstracts

According to Statistics MRC, the Global Compostable E-commerce Packaging Market is accounted for \$1.6 billion in 2026 and is expected to reach \$5.1 billion by 2034 growing at a CAGR of 15.5% during the forecast period. Compostable e-commerce packaging refers to biodegradable packaging solutions specifically designed for online retail shipments that break down into natural elements under composting conditions. These packaging materials include polylactic acid, polyhydroxyalkanoate, starch blends, and plant-based fibers that break down into carbon dioxide, water, and biomass within industrial or home composting environments. The technology encompasses flexible films, rigid containers, cushioning materials, and void fill products that provide protective functionality during transit while eliminating plastic waste accumulation. Compostable e-commerce packaging serves online retailers, food delivery services, and consumer goods brands that seek to reduce their environmental impact and meet circular economy objectives.

Market Dynamics:

Driver:

E-commerce sustainability mandates

The exponential growth of online shopping is generating massive packaging waste volumes that drive demand for compostable alternatives. Major e-commerce platforms and retailers are implementing aggressive sustainability targets requiring transition away from conventional plastics. Consumer preference for environmentally responsible brands influences purchasing decisions and loyalty patterns. Regulatory frameworks in Europe and North America mandate extended producer responsibility for packaging waste. The alignment of compostable materials with corporate ESG reporting requirements strengthens business case adoption across supply chains.

Restraint:

Higher material costs

Compostable packaging materials typically cost significantly more than conventional plastic alternatives, creating margin pressure for e-commerce operators. Limited production scale and nascent supply chain infrastructure contribute to premium pricing. Performance characteristics, including moisture resistance and durability, may not match petroleum-based materials in all applications. The need for industrial composting facilities in many regions limits end-of-life disposal options. These economic and performance constraints slow widespread substitution in price-sensitive market segments.

Opportunity:

Home compostable innovations

Development of packaging materials certified for home composting presents substantial market expansion opportunities. Home compostable products decompose in backyard conditions without requiring industrial facilities, expanding accessibility for consumers. Advances in barrier coatings and material formulations improve performance while maintaining biodegradability. Brand differentiation through home compostable certification captures premium consumer segments. Regulatory trends favoring home composting standards accelerate material innovation investments.

Threat:

Greenwashing scrutiny

Increasing regulatory and consumer scrutiny of environmental claims poses risks to the development of the compostable packaging market. Inadequate certification standards and misleading labeling undermine trust in compostable products. Competition from recyclable and reusable packaging alternatives challenges market positioning. The complexity of composting infrastructure requirements creates confusion among consumers and businesses. Enforcement actions against unsubstantiated environmental claims increase compliance costs.

Covid-19 Impact:

The COVID-19 pandemic dramatically accelerated e-commerce adoption, increasing packaging demand while highlighting sustainability concerns. Initial supply chain disruptions affected compostable material availability. However, heightened environmental awareness during lockdowns strengthened consumer preference for sustainable packaging. Post-pandemic, the sustained shift toward online shopping sustains demand for compostable e-commerce solutions. The crisis catalyzed corporate commitments to plastic reduction and circular packaging strategies.

The wheat straw & bamboo fiber segment is expected to be the largest during the forecast period

The wheat straw & bamboo fiber segment is expected to account for the largest market share during the forecast period, due to abundant agricultural waste feedstock availability and strong fiber properties. These rapidly renewable materials offer comparable performance to wood pulp with a lower environmental footprint. Asian markets leverage established bamboo processing infrastructure for cost-competitive production. Growing recognition of agricultural residue valorization supports circular economy narratives. The segment benefits from favorable regulatory treatment and consumer perception of natural origin materials.

The flexible packaging segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the flexible packaging segment is predicted to witness the highest growth rate, driven by dominance in e-commerce shipping applications, including mailers, pouches, and wraps. Flexible formats minimize material usage and shipping weight compared to rigid alternatives. Advances in compostable film extrusion and sealing technologies improve performance for protective applications. The segment aligns with e-commerce operational requirements for lightweight, space-efficient

packaging. Innovation in printable and customizable flexible compostable materials supports brand differentiation.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, due to stringent regulatory requirements and strong corporate sustainability commitments. The United States leads with major e-commerce platforms implementing compostable packaging transitions. Well-developed composting infrastructure in many municipalities supports end-of-life processing. Consumer willingness to pay premiums for sustainable products drives market development. Federal and state-level plastic reduction policies accelerate adoption timelines.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, driven by massive e-commerce growth and expanding middle-class consumer bases. China and India represent major growth markets with increasing environmental awareness and regulatory development. Local material production capabilities reduce costs and supply chain complexity. Government initiatives promoting the circular economy and plastic waste reduction create favorable policy environments. The region's dominance in global e-commerce transaction volumes sustains demand growth.

Key players in the market

Some of the key players in Compostable E-commerce Packaging Market include Amcor plc, Tetra Pak International S.A., Sealed Air Corporation, BASF SE, Novamont S.p.A., NatureWorks LLC, Mondi Group, Smurfit Kappa Group plc, DS Smith Plc, WestRock Company, International Paper Company, Stora Enso Oyj, UPM-Kymmene Corporation, TotalEnergies Corbion, Biome Bioplastics Limited, TIPA Corp Ltd., Transcend Packaging Ltd. and Futamura Chemical Co. Ltd..

Key Developments:

In May 2026, Amcor plc launched a certified home-compostable e-commerce mailer with advanced moisture barrier properties, enabling direct-to-consumer brands to replace plastic polybags with biodegradable alternatives.

In April 2026, Sealed Air Corporation expanded its compostable void fill production capacity in Europe with automated fiber molding technology, supporting scalable transition from expanded polystyrene for online retail protective packaging.

In March 2026, NatureWorks LLC introduced a high-performance PLA resin optimized for e-commerce flexible films, offering improved tear resistance and seal strength while maintaining full industrial compostability.

Material Types Covered:

Polylactic Acid (PLA)

Polyhydroxyalkanoate (PHA)

Starch Blends

Paper & Paperboard

Wheat Straw & Bamboo Fiber

Other Material Types

Packaging Formats Covered:

Flexible Packaging

Rigid Packaging

Void Fill & Cushioning

End Users Covered:

Food & Beverage

Cosmetics & Personal Care

Household Care

Healthcare & Pharma

E-commerce & Retail Distribution

Consumer Electronics

Other End Users

Distribution Channels Covered:

Direct Sales

Distributors

E-commerce Platforms

Specialty & Refill Stations

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

Contents

1 EXECUTIVE SUMMARY

- 1.1 Market Snapshot and Key Highlights
- 1.2 Growth Drivers, Challenges, and Opportunities
- 1.3 Competitive Landscape Overview
- 1.4 Strategic Insights and Recommendations

2 RESEARCH FRAMEWORK

- 2.1 Study Objectives and Scope
- 2.2 Stakeholder Analysis
- 2.3 Research Assumptions and Limitations
- 2.4 Research Methodology
 - 2.4.1 Data Collection (Primary and Secondary)
 - 2.4.2 Data Modeling and Estimation Techniques
 - 2.4.3 Data Validation and Triangulation
 - 2.4.4 Analytical and Forecasting Approach

3 MARKET DYNAMICS AND TREND ANALYSIS

- 3.1 Market Definition and Structure
- 3.2 Key Market Drivers
- 3.3 Market Restraints and Challenges
- 3.4 Growth Opportunities and Investment Hotspots
- 3.5 Industry Threats and Risk Assessment
- 3.6 Technology and Innovation Landscape
- 3.7 Emerging and High-Growth Markets
- 3.8 Regulatory and Policy Environment
- 3.9 Impact of COVID-19 and Recovery Outlook

4 COMPETITIVE AND STRATEGIC ASSESSMENT

- 4.1 Porter's Five Forces Analysis
 - 4.1.1 Supplier Bargaining Power
 - 4.1.2 Buyer Bargaining Power
 - 4.1.3 Threat of Substitutes
 - 4.1.4 Threat of New Entrants

- 4.1.5 Competitive Rivalry
- 4.2 Market Share Analysis of Key Players
- 4.3 Product Benchmarking and Performance Comparison

5 GLOBAL COMPOSTABLE E-COMMERCE PACKAGING MARKET, BY MATERIAL TYPE

- 5.1 Polylactic Acid (PLA)
- 5.2 Polyhydroxyalkanoate (PHA)
- 5.3 Starch Blends
- 5.4 Paper & Paperboard
- 5.5 Wheat Straw & Bamboo Fiber
- 5.6 Other Material Types

6 GLOBAL COMPOSTABLE E-COMMERCE PACKAGING MARKET, BY PACKAGING FORMAT

- 6.1 Flexible Packaging
- 6.2 Rigid Packaging
- 6.3 Void Fill & Cushioning

7 GLOBAL COMPOSTABLE E-COMMERCE PACKAGING MARKET, BY END USER

- 7.1 Food & Beverage
- 7.2 Cosmetics & Personal Care
- 7.3 Household Care
- 7.4 Healthcare & Pharma
- 7.5 E-commerce & Retail Distribution
- 7.6 Consumer Electronics
- 7.7 Other End Users

8 GLOBAL COMPOSTABLE E-COMMERCE PACKAGING MARKET, BY DISTRIBUTION CHANNEL

- 8.1 Direct Sales
- 8.2 Distributors
- 8.3 E-commerce Platforms
- 8.4 Specialty & Refill Stations

9 GLOBAL COMPOSTABLE E-COMMERCE PACKAGING MARKET, BY GEOGRAPHY

9.1 North America

9.1.1 United States

9.1.2 Canada

9.1.3 Mexico

9.2 Europe

9.2.1 United Kingdom

9.2.2 Germany

9.2.3 France

9.2.4 Italy

9.2.5 Spain

9.2.6 Netherlands

9.2.7 Belgium

9.2.8 Sweden

9.2.9 Switzerland

9.2.10 Poland

9.2.11 Rest of Europe

9.3 Asia Pacific

9.3.1 China

9.3.2 Japan

9.3.3 India

9.3.4 South Korea

9.3.5 Australia

9.3.6 Indonesia

9.3.7 Thailand

9.3.8 Malaysia

9.3.9 Singapore

9.3.10 Vietnam

9.3.11 Rest of Asia Pacific

9.4 South America

9.4.1 Brazil

9.4.2 Argentina

9.4.3 Colombia

9.4.4 Chile

9.4.5 Peru

9.4.6 Rest of South America

9.5 Rest of the World (RoW)

9.5.1 Middle East

9.5.1.1 Saudi Arabia

9.5.1.2 United Arab Emirates

9.5.1.3 Qatar

9.5.1.4 Israel

9.5.1.5 Rest of Middle East

9.5.2 Africa

9.5.2.1 South Africa

9.5.2.2 Egypt

9.5.2.3 Morocco

9.5.2.4 Rest of Africa

10 STRATEGIC MARKET INTELLIGENCE

10.1 Industry Value Network and Supply Chain Assessment

10.2 White-Space and Opportunity Mapping

10.3 Product Evolution and Market Life Cycle Analysis

10.4 Channel, Distributor, and Go-to-Market Assessment

11 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES

11.1 Mergers and Acquisitions

11.2 Partnerships, Alliances, and Joint Ventures

11.3 New Product Launches and Certifications

11.4 Capacity Expansion and Investments

11.5 Other Strategic Initiatives

12 COMPANY PROFILES

12.1 Amcor plc

12.2 Tetra Pak International S.A.

12.3 Sealed Air Corporation

12.4 BASF SE

12.5 Novamont S.p.A.

12.6 NatureWorks LLC

12.7 Mondi Group

12.8 Smurfit Kappa Group plc

12.9 DS Smith Plc

12.10 WestRock Company

- 12.11 International Paper Company
- 12.12 Stora Enso Oyj
- 12.13 UPM-Kymmene Corporation
- 12.14 TotalEnergies Corbion
- 12.15 Biome Bioplastics Limited
- 12.16 TIPA Corp Ltd.
- 12.17 Transcend Packaging Ltd.
- 12.18 Futamura Chemical Co. Ltd.

List Of Tables

LIST OF TABLES

Table 1 Global Compostable E-commerce Packaging Market Outlook, By Region (2023-2034) (\$MN)

Table 2 Global Compostable E-commerce Packaging Market Outlook, By Material Type (2023-2034) (\$MN)

Table 3 Global Compostable E-commerce Packaging Market Outlook, By Polylactic Acid (PLA) (2023-2034) (\$MN)

Table 4 Global Compostable E-commerce Packaging Market Outlook, By Polyhydroxyalkanoate (PHA) (2023-2034) (\$MN)

Table 5 Global Compostable E-commerce Packaging Market Outlook, By Starch Blends (2023-2034) (\$MN)

Table 6 Global Compostable E-commerce Packaging Market Outlook, By Paper & Paperboard (2023-2034) (\$MN)

Table 7 Global Compostable E-commerce Packaging Market Outlook, By Wheat Straw & Bamboo Fiber (2023-2034) (\$MN)

Table 8 Global Compostable E-commerce Packaging Market Outlook, By Other Material Types (2023-2034) (\$MN)

Table 9 Global Compostable E-commerce Packaging Market Outlook, By Packaging Format (2023-2034) (\$MN)

Table 10 Global Compostable E-commerce Packaging Market Outlook, By Flexible Packaging (2023-2034) (\$MN)

Table 11 Global Compostable E-commerce Packaging Market Outlook, By Rigid Packaging (2023-2034) (\$MN)

Table 12 Global Compostable E-commerce Packaging Market Outlook, By Void Fill & Cushioning (2023-2034) (\$MN)

Table 13 Global Compostable E-commerce Packaging Market Outlook, By End User (2023-2034) (\$MN)

Table 14 Global Compostable E-commerce Packaging Market Outlook, By Food & Beverage (2023-2034) (\$MN)

Table 15 Global Compostable E-commerce Packaging Market Outlook, By Cosmetics & Personal Care (2023-2034) (\$MN)

Table 16 Global Compostable E-commerce Packaging Market Outlook, By Household Care (2023-2034) (\$MN)

Table 17 Global Compostable E-commerce Packaging Market Outlook, By Healthcare & Pharma (2023-2034) (\$MN)

Table 18 Global Compostable E-commerce Packaging Market Outlook, By E-commerce

& Retail Distribution (2023-2034) (\$MN)

Table 19 Global Compostable E-commerce Packaging Market Outlook, By Consumer Electronics (2023-2034) (\$MN)

Table 20 Global Compostable E-commerce Packaging Market Outlook, By Other Other End Users (2023-2034) (\$MN)

Table 21 Global Compostable E-commerce Packaging Market Outlook, By Distribution Channel (2023-2034) (\$MN)

Table 22 Global Compostable E-commerce Packaging Market Outlook, By Direct Sales (2023-2034) (\$MN)

Table 23 Global Compostable E-commerce Packaging Market Outlook, By Distributors (2023-2034) (\$MN)

Table 24 Global Compostable E-commerce Packaging Market Outlook, By E-commerce Platforms (2023-2034) (\$MN)

Table 25 Global Compostable E-commerce Packaging Market Outlook, By Specialty & Refill Stations (2023-2034) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

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