Market Study: Bioplastic Films





This brochure provides further information on the study "Bioplastic Films - World (1st edition)"

The Market Study in Brief

Wafer-thin films, often less than 1 millimeter thick, are one of the first areas of application in which bioplastics are able to establish themselves. Although casings made from petroleum products are still usually sold cheaper and in larger quantities, biobased materials do not only offer a better public image regarding environmental awareness, but often also tangible advantages: Food packaging made from biodegradable plastics does not have to be disposed of at high cost, but can be composted; organic mulch films can simply be left on the field and plowed under. The report forecasts that revenues will increase to USD 14.2 billion by 2032.

Increasing demand for biobased films

If a film is supposed to crackle nicely, be transparent and permeable to water vapor, cellulose hydrate is hard to beat: The original bioplastic has been used since 1908 under names such as cellophane to package chocolates, flowers, spice jars or even cigarettes. For films made of polyethylene or polypropylene, biobased alternatives have long since ceased to be made only from wood or waste paper cellulose. Ceresana expects annual growth of over 14.6% in Asia, around 11% in North America and just over 8% in Europe.

Biobased films mainly package food products

Bags, pouches and sacks currently are the best-known application for bioplastics. Food packaging is the most important market for films made from bioplastics: In 2022, it accounted for around 47% of their market volume. However, shrink and stretch films are by no means only used in the packaging industry. Bioplastic films are also used, for example, for labels, adhesive tapes, technical

insulating layers or medical wound dressings. In horticulture, forestry and agriculture, the consumption of films is increasing, as well as in the construction industry, the printing industry and other sectors. Ceresana expects the highest CAGR of 12% for agricultural films, industrial films and construction films. Increasingly, bioplastics are even conquering high-tech products: Membranes for water filters are made of polymer films, and plastic films are also used in batteries for electric cars.

The current Ceresana market study:

Chapter 1 analyzes the global market - including forecasts up to 2032: The development of demand (tonnes) and revenues (USD and EUR) is presented for Europe, North America, Asia-Pacific and the rest of the world.

In **Chapter 2**, the 11 countries with the largest revenues generated with films are considered individually. Demand and revenues are presented in each case. In addition, demand is broken down by application:

- Packaging Food and beverages
- Packaging Consumer products
- Packaging Other
- Agricultural films
- Other films

The study provides detailed data on the use of the different types of bioplastics in films:

- Polylactic acid (PLA)
- Starch-based plastics
- Other biodegradable plastics
- Biobased, but non-biodegradable plastics

Chapter 3 provides 47 profiles of the most important producers of films made from bioplastics, e.g. Bio Packaging Films, Cortec, Folietec, Futamura, Hubei HYF, Kuraray, and Stermitz.

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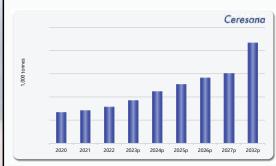
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In 2022, the demand for bioplastic films in the USA amounted to approximately X tonnes. Globally, the USA constitutes the second largest domestic market after China. We expect the market volume to increase to approximately X tonnes by 2032. Based on the year 2022, this corresponds to an average increase of X% per year. Revenues generated with bioplastic films amounted to around USD X million in 2022. By 2032, we expect this value to increase to approximately USD X billion. Relative to 2022, we expect an average growth rate of X% per year.



Graph: Demand in the USA from 2020 to 2032

Revenues	2020	2021	2022	2023p	2024p	2025p	2026p	2027p	2032p	2022- 2032
Million USD	х	х	х	х	Х	Х	х	х	х	X% p.a.
Million EUR	х	х	х	х	Х	х	х	х	х	X% p.a.

in 1,000 tonnes	2020	2021	2022	2023p	2024p	2025p	2026p	2027p	2032p	2022 2032
Packaging - Food and beverages	х	х	Х	х	х	Х	х	х	Х	X% p.a.
Packaging - Consumer products	х	х	х	х	х	Х	х	х	Х	X% p.a.
Packaging - Other	х	х	х	х	х	Х	х	х	Х	X% p.a.
Agricultural Films	х	Х	Х	х	Х	Х	х	х	Х	X% p.a.
Other Films	х	х	х	х	х	х	х	х	Х	X% p.a.
Total	х	х	х	х	Х	Х	Х	х	Х	X% p.a.

in 1,000 tonnes	2020	2021	2022	2023p	2024p	2025p	2026p	2027р	2032p	2022- 2032
PLA	х	Х	Х	Х	Х	Х	Х	Х	Х	X% p.a.
Starch	х	Х	Х	х	х	Х	х	Х	Х	X% p.a.
Other Biodegradables	х	х	х	х	х	х	х	х	Х	X% p.a.
Non- Biodegradables	х	х	х	х	х	х	х	х	х	X% p.a.
Total	х	х	х	х	х	Х	х	х	Х	X% p.a.

Table: Demand in the USA from 2020 to 2032 – split by product

In 2022, the "Packaging – Food and beverages" application area constituted the largest sub-market. From 2022 to 2032, demand in the "Agricultural Films" application area is expected to record the highest growth in terms of percentages.

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Market Study: "Bioplastic Films - World (1st edition)"
11 Countries, 47 Producers, 180 Pages, 42 Graphs, 71 Tables, 07/2023

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(For each country: data on revenues as well as demand split by application and split by product)

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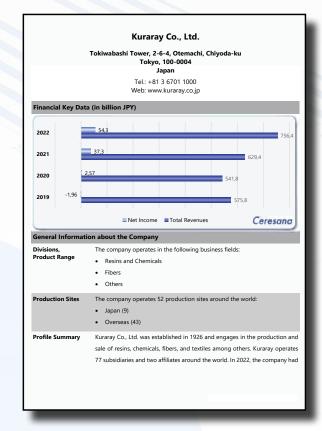
South Korea (1)

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a consolidated total of 11,703 employees and total assets amounted to JPY 1.22 trillion.

During 2014, the company changed the end of its financial year from March to December. The company is listed on the Tokyo Stock Exchange.

Divided by region, 23.6% of net sales 2022 were generated in Japan, 21.8% in the USA, 11.9% in China, 25.7% in Europe, 11.2% in Asia, and 5.8% in other areas.

Split by business field, 48% of net sales 2022 were generated with vinyl acetate, 8.2% with isoprene, 21.7% with functional materials, 8.3% with fibers and textiles, 7.3% with trading, and 6.5% with others.

Kuraray's plants and affiliates are certified according to ISO 9001 and ISO

Specific Information about Bioplastic Films

Kuraray offers bioplastic films through its subsidiary Plantic Technologies Limited, based in Australia. The bioplastic used is made from renewable and sustainable raw materials. The films include flexible films, vacuum skin packaging, and monolayer sheets for packaging applications.

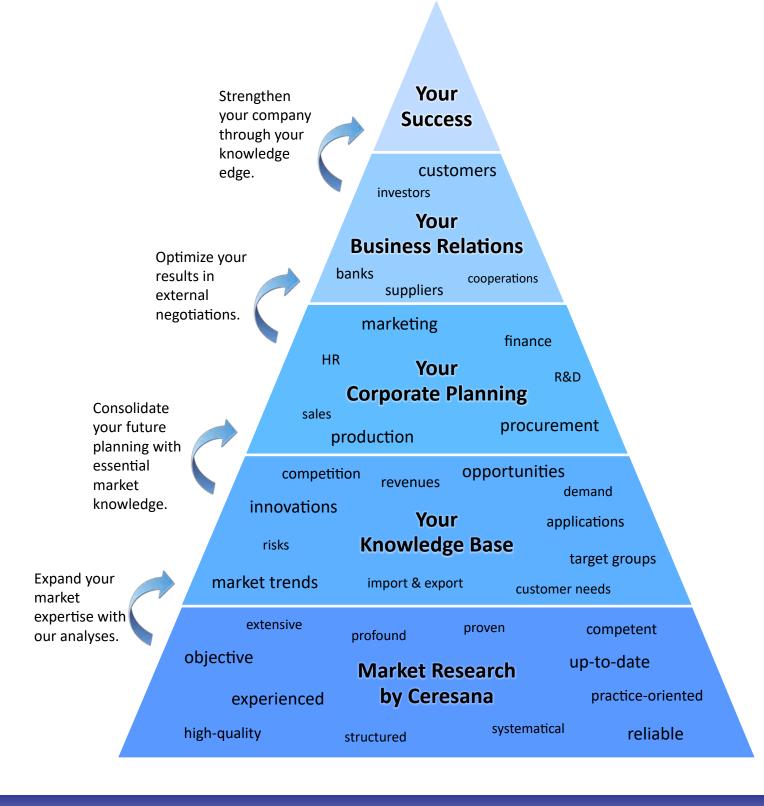
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^{*}Note: The profiles are assigned to the country in which the company or holding is headquartered. Profiles also include JVs and subsidiaries.

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