

Bio-based 1,4-Butanediol - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Bio-based 1,4-Butanediol Market size is estimated at 42.41 kilotons in 2025, and is expected to reach 66.61 kilotons by 2030, at a CAGR of 9.45% during the forecast period (2025-2030).

In 2020, the COVID-19 pandemic affected the bio-based 1,4-butanediol market due to quarantined workforces, general businesses being shut down, and disrupted supply chains. Many factories responsible for bio-based 1,4-butanediol production were also shut down during the pandemic. However, in 2021, the market gradually started to recover as governments worldwide started to counter the problems caused by the pandemic.

Key Highlights

- The major factors driving the market's growth are the increasing demand for polybutylene terephthalate (PBT) from various industries and stringent government regulations.
- On the flip side, massive competition from fossil fuel-based products remains a concern for the market studied.
- The shifting focus toward eco-friendly products will likely provide opportunities for the market during the forecast period.
- Europe dominated the market across the world. The demand in the region is driven by the growing usage of bio-based 1,4-butanediol in industries such as automotive, electronics, and consumer appliances.

Bio-based 1,4-Butanediol Market Trends

Increasing Demand in the Textile Market

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- 1,4 BDO is used as an adhesive in leather, plastics, polyester laminates, and polyurethane footwear. 1,4-butanediol is an immediate chemical used in thermoplastic polyurethane (TPU) production, which is used in making synthetic leather sole material.
- However, 1-4 BDO produces tetrahydrofuran (THF), which is used to make spandex fiber captured in the garment industry. Spandex is a lightweight, soft, smooth synthetic fiber with a unique elasticity. Due to its elastic properties, it is used in making stretchable clothing.
- Spandex fibers, consisting of 80% poly (tetramethylene ether) glycol (PTMEG or PolyTHF), can be stretched to between 500% and 700% of their original length and durably retain their shape.
- Spandex fabric is highly used in clothing items such as athletic wear, stretch pants, yoga pants, skinny jeans, underwear, bras, socks, and motion capture suits.
- Due to the flexibility offered by spandex-blended clothing or garments, their demand is expected to grow Y-o-Y. For instance, according to the BSE (Bombay Stock Exchange), the value of apparel in India's sports and athleisure retail market is estimated to mark a growth of 92% by 2025 compared to 2022.
- BDO is a highly preferred material in the footwear industry. The growth in the demand for footwear will expand the market size of BDO. For instance, footwear retail sales in Germany were 4% higher in 2023, according to the BTE - Trade Association of Textile, Shoes and Leather Goods.
- Such factors indicate that the textile industry will observe stagnant growth during the forecast period.

Europe is Expected to Dominate the Market

- Europe dominated the global market share. The demand in the market is driven by the growing demand from industries such as automotive, electronics, and consumer appliances.
- Germany has the most significant electronic and automobile industry in Europe. The German electrical and electronics market is Europe's largest and the fifth-largest worldwide.
- According to the ZVEI, the turnover of Germany's electro and digital industry accounted for EUR 239 billion (USD 260.4 billion) in 2023, witnessing a growth rate of over 6% compared to EUR 225 billion (USD 245.17 billion) in 2022. Such trends in the industry have enhanced the demand for bio-based 1,4 butanediol for electronics and semiconductor applications in the country.
- Germany also leads the European automotive market, with 41 assembly and engine production plants contributing to one-third of Europe's total automobile production. In 2022, the country produced 36,77,820 cars and commercial vehicles, marking a growth of 11% compared to 2021, according to the International Organization of Motor Vehicle Manufacturers (OICA). The large and growing size of Germany's automotive industry will likely boost the market of BDO during the forecast period.
- The United Kingdom is the largest European market for high-end consumer electronics products, with over 10,000 UK-based electronics companies. The demand for technologically advanced electronic devices registered significant growth in the country's consumer electronics market. This increase in demand is expected to drive electronics production in the country, leading to the need for bio-based 1,4-butanediol for electronic applications.
- The French automobile industry fared much better compared to other major European economies in the past few years. In 2022, the country produced about 13,83,173 units of cars and commercial vehicles, an increase of 2% compared to 2021, according to the International Organization of Motor Vehicle Manufacturers (OICA).
- The increasing income of the population and the rising demand for consumer appliances such as air-conditioners, fridges, washing machines, and microwaves are further driving the consumer appliances market's growth.
- Hence, such favorable market trends are expected to drive the demand for bio-based 1,4-butanediol for raw material applications in the region during the forecast period.

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Bio-based 1,4-Butanediol Industry Overview

The global bio-based 1,4 butanediol market is an oligopoly, where Novamont SpA holds the dominant production capacity share. Some of the noticeable players in the market include (not in a particular order) Novamont SpA, Shandong Landian Biological Technology, DSM, BASF SE, and Global Bio-chem Technology Group Company Limited.

Additional Benefits:

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

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