Polyhydroxy Butyrate Market Research Report - Global Forecast till 2025

Global Polyhydroxy Butyrate Market Research Report: Information by Type (Powder, Film, Sheet, and Granules), End-Use Industry (Packaging, Biomedical, Consumer Goods, Agriculture, and Others), and Region (Asia-Pacific, North America, Europe, Latin America, and Middle East & Africa)—Forecast till 2025.

The global polyhydroxy butyrate is projected to grow at a robust CAGR of ~18.69% during the forecast period.

Polyhydroxy butyrate (PHB) is a naturally occurring, partially crystalline polymer. These are primarily synthesized by prokaryotic microorganisms as an energy storage molecule to be metabolized during starvation. Several bacterial strains such as Alcaligenes, Azotobacter, Bacillus, Nocardia, Pseudomonas, and Rhizobium are potent producers of PHB. Owing to its biological degradability and non-pollutant characteristics, polyhydroxybutyrate is an attractive alternative to petroleum-derived plastics. Thus, finds a variety of applications in several end-use industries such as packaging and biomedical and others.

The increasing environmental regulations and rising concerns related to plastic waste accumulation are driving the global demand for biodegradable plastics. Polyhydroxybutyrate (PHB), exhibits thermoplastic characteristics and resemble synthetic polymers to a larger extent, making them useful for extensive synthetic plastic-based applications. Thus, PHB as an eco-friendly plastic is extensively evolving to overcome the hazards caused by conventional, non-degradable petroleum-based plastics.

In addition, the increasing use of PHB bioplastics as a substitute for polyolefin commodities like polypropylene (PP) and polyethylene (PE) are creating lucrative opportunities for the key players operating in polyhydroxybutyrate market. Furthermore, on account of its biocompatibility and flourishing nanotechnology the use of PHB in medical applications is further expected to propel the market growth.

The high fabrication cost and poor mechanical properties of the biopolymer limit its range of applications, thus pose a threat to the global market growth. However, by the addition of a small quantity of environmentally benign materials, bioplastics of improved mechanical properties can be produced. For instance, to improve the impact strength, PHB is incorporated with hydroxy valerate producing polyhydroxybutyrate-co-valerate (PHBV) commercially known as Biopol. Thus, can be used for a variety of applications such as in manufacturing, shampoo bottles, disposable cups, knives and forks, and woven medical patches.

Regional Analysis

The global polyhydroxy butyrate market is analyzed for five major regions, namely– North America, Asia-Pacific, Europe, Latin America, and the Middle East & Africa.

The European market accounted for a dominant share in 2018 owing to the reduced dependency on fossil fuels and rising demand for sophisticated biopolymers. This is largely attributed to the presence of mature bioplastic industries and rise in several legislations by the FDA and EPA in the region. According to the European Biomass Industry Association, Western Europe occupies 41.5% of the global biopolymers market, which thus showcases a stable growth of the global bioplastics industry during the forecast period. Additionally, the increasing use of biopolymers in biomedical industry coupled with the strong R&D in the region is further propelling the market demand. On account of UV
resistance and oxygen permeability, PHB finds a variety of applications in biomedical and medical industry. For instance, PHB owing to the aforementioned properties is used in tissue engineering and production of microcapsules for controlled drug release.

The market in Asia-Pacific is projected to register the highest CAGR during the forecast period owing to the swiftly rising industrialization coupled with the increase in disposable income. This is fueling the demand for PHB in the rising demand for packaged foods and packing films in the region. Additionally, the increasing environmental concerns and strict restrictions imposed on the usage of plastic goods is further propelling the regional market demand. Japan is the leading country in the region and is expected to grow substantially during the foreseeable period. For instance, Japan Ministry of Environment estimates the use of 2 million tons of bioplastics per year by the end of 2030, thus propelling the demand for polyhydroxy butyrate in the region. Other countries such as India, China, and South Korea are further propelling the market growth owing to the implementation of various environmental regulations imposed by the government.

The market in North American is expected to showcase significant growth during the forecast period. This is largely attributed to the stringent environmental regulations about the use of non-degradable plastics. In addition, the recent advancements for the development of new generation biopolymer-based nanocomposites for food packaging materials are further propelling the growth in the market. The US is the leading country in the region on account of vast biotechnology and packaging industry.

Latin America and the Middle East & Africa are expected to show substantial growth during the forecast period owing to the increasing industrialization and increased per capita disposable income.

Segmentation

The global polyhydroxy butyrate market has been segmented based on type, end use, and region.

Based on type, the global market is classified into powder, film, sheet, and granules.

Based on end use, the global market has been classified into packaging, biomedical, consumer goods, agriculture, and others.

By region, the market has been categorized as North America, Europe, Asia-Pacific, Latin America, and the Middle East & Africa.

Key Players

Some of the key players in the global market are Biome Technologies PLC (UK), Kaneka Corporation (Japan), BASF SE (Germany), PolyFerm Canada (Canada), FULL CYCLE BIOPLASTICS(USA), Cardia Bioplastics (Australia), Tianjin GreenBio Materials Co., Ltd (China), TianAn Biologic Materials Co., Ltd. (China), Green Dot Bioplastics (USA), and AGRANA Beteiligung AG(Austria).

Intended Audience

- Traders and distributors of polyhydroxy butyrate
- Potential investors
- Raw material suppliers
- Polyhydroxy butyrate manufacturers
- Distributors
- Industry associations
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