Biodegradable Plastics and Polymers

(Coated Paper, Shopping Bags, Landfill Cover Film, Plant Phytotoxicity Testing, Toxicity, Fillers, Activated Sludge, Copolyesters, Monomer, Polymer, Fibre-Reinforced Composites, Biodegradable Polymers, Biodegradation, Polysaccharides, Collagen, Bacterial Cellulose, Biobased Materials)
Introduction

Biodegradable plastics are plastics that are decomposed by the action of living organisms, usually bacteria. Two basic classes of biodegradable plastics exist: Bioplastics, whose components are derived from renewable raw materials, and plastics made from petrochemicals containing biodegradable additives which enhance biodegradation.

Biodegradable polymers are a specific type of polymer that breaks down after its intended purpose to result in natural by products such as gases (CO2, N2), water, biomass, and inorganic salts. These polymers are found both naturally and synthetically made, and largely consist of ester, amide, and ether functional groups. Their properties and breakdown mechanism are determined by their exact structure. These polymers are often synthesized by condensation reactions, ring opening polymerization, and metal catalysts. There are vast examples and applications of biodegradable polymers.
This book basically deals with biodegradable plastics developments and environmental impacts, hydro biodegradable and photo biodegradable, starch synthetic aliphatic polyester blends, difference between standards for biodegradation, polybutylene succinate (pbs) and polybutylene, recent developments in the biopolymer industry, recent advances in synthesis of biopolymers by traditional methodologies, polymers, environmentally degradable synthetic biodegradable polymers as medical devices, polymers produced from classical chemical synthesis from bio based monomers, potential bio based packaging materials, conventional packaging materials, environmental impact of bio based materials: biodegradability and compostability, etc.
Environmentally acceptable degradable polymers have been defined as polymers that degrade in the environment by several mechanisms and culminate in complete biodegradation so that no residue remains in the environment. The present book gives thorough information to biodegradable plastic and polymers. This is an excellent book for scientists engineers, students and industrial researchers in the field of bio based materials.
Market Outlook

Global demand for biodegradable polymer market was valued at around USD 1.68 billion in 2014 and is expected to reach approximately USD 5.18 billion in 2020, growing at a CAGR of slightly above 21.0% between 2015 and 2020.
Global Biodegradable Polymer Market

Revenue (USD Billion)

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue</th>
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<tbody>
<tr>
<td>2014</td>
<td>1.68</td>
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<tr>
<td>2015</td>
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<td>2016</td>
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<td>2019</td>
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<tr>
<td>2020</td>
<td>5.18</td>
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The global market was valued at USD 2040.2 million in 2016 and is forecast to reach USD 5324.4 million by 2021.

The global biodegradable polymer market should reach 5.6 billion pounds by 2021 from 2.4 billion pounds in 2016 at a compound annual growth rate (CAGR) of 18.0%, from 2016 to 2021.
The global biodegradable polymers market to grow exponentially at a CAGR of around 21% by 2021.

Global biodegradable polymers market to grow at a CAGR of over 21% during the forecast period 2017-2021.

The global biodegradable plastics market in terms of volume is expected to grow from 664,000 metric tons in 2010 to 2330,000 metric tons by 2016, at an estimated CAGR of 20.24% from 2011 to 2016.
Global Bio Plastic Market
The global bio plastics market was 19.54 billion USD in 2016 and is estimated to reach US$ 65.58 billion in 2022 at an estimated CAGR of 22.36% for the forecasted period.
Bioplastic: US demand

- Polylactic acid: 45%
- Bio-based polyethylene: 26%
- Starch-based: 12%
- Degradable polyesters: 4%
- Cellulose: 3%
- Bio-based polyamides: 2%
- Other: 8%
The global bioplastics market to grow at a high CAGR of more than 29% by 2020. The rise in demand for eco-friendly packaging has propelled several plastic manufacturers and packaging vendors to shift towards the use of bioplastics in packaging.
Estimated Biopolymer & Bioplastic Growth

Year | Estimated Growth
---|---
2011 | 1.2
2012 | 2.16
2013 | 3.12
2014 | 4.08
2015 | 5.04
2016 | 6.96
2017 | 7.92
2018 | 8.88
2019 | 9.25
2020 | 12

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- Adhesives, Industrial Adhesive, Sealants, Glues, Gum & Resin
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- Minerals And Minerals
- Maize Processing (Wet Milling) & Maize Based Projects
- Medical Plastics, Disposables Plastic Syringe, Blood Bags
- Organic Farming, Neem Products Etc.
Sectors We Cover

- Paints, Pigments, Varnish & Lacquer
- Paper And Paper Board, Paper Recycling Projects
- Printing Inks
- Packaging Based Projects
- Perfumes, Cosmetics And Flavours
- Power Generation Based Projects & Renewable Energy Based Projects
- Pharmaceuticals And Drugs
- Plantations, Farming And Cultivations
- Plastic Film, Plastic Waste And Plastic Compounds
- Plastic, PVC, PET, HDPE, LDPE Etc.
Sectors We Cover

- Potato And Potato Based Projects
- Printing And Packaging
- Real Estate, Leisure And Hospitality
- Rubber And Rubber Products
- Soaps And Detergents
- Stationary Products
- Spices And Snacks Food
- Steel & Steel Products
- Textile Auxiliary And Chemicals
Sectors We Cover  Cont…

- Township & Residential Complex
- Textiles And Readymade Garments
- Waste Management & Recycling
- Wood & Wood Products
- Water Industry (Packaged Drinking Water & Mineral Water)
- Wire & Cable
Contact us

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