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Resorbable (Bioresorbable) Polymers Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028 Segmented By Type (Agro-Polymers, Biopolyesters, Others), By Application (Orthopedics, Cardiac Implants, Dental Implants, Oral Drug Delivery, Others), By Region and Competition

https://marketpublishers.com/r/R627743E7248EN.html
Date: November 2023
Pages: 183
Price: US$ 4,900.00 (Single User License)
ID: R627743E7248EN

Abstracts

Global Resorbable (Bioresorbable) Polymers Market has valued at USD418.25 million in 2022 and is anticipated to project robust growth in the forecast period with a CAGR of 4.95% through 2028. Bioresorbable polymers, a groundbreaking technological advancement in the field of materials, offer a unique characteristic of being broken down by the body without requiring mechanical removal, such as sutures or the chlorhexidine chip. These bioresorbable materials find applications in a wide range of medical indications, including sutures, coronary and peripheral vascular scaffolds, tissue fixation screws, bone pins and anchors, drug delivery coatings, as well as microspheres, surgical meshes, and matrices. The materials in this category encompass polymers, metals, ceramics, glasses, and even materials of biological origin like natural collagen, which not only allow for drug elution and delivery but also serve mechanical functions.

Currently, the bioresorbable market is in its developing stage, although bioresorbable sutures have been available for over 40 years. Recent innovations have expanded the market to encompass cardiovascular, orthopedic, and general surgery. Looking ahead, the global bioresorbable market is anticipated to witness substantial growth, driven by the increasing demand from major applications such as orthopedics and drug delivery. Factors contributing to the growth of the bioresorbable market include patient-friendliness, the rising demand for drugs and medicines, the growing number of surgeries, and the increasing awareness among people. However, it is important to note

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that technological sophistication resulting in higher costs may pose a challenge and restrain the growth of the market.

Key Market Drivers

Growth in Medical Industry

The growth of the medical industry is a major driver for the increasing demand for resorbable polymers. As advancements in medical technology continue to occur, there is a growing focus on minimally invasive procedures. This shift in approach has led to a widespread use of bioresorbable polymers in various applications.

One of the significant factors propelling the market growth is the rising demand for these polymers in biocompatible medical devices and drug delivery applications. The biodegradable nature of these polymers makes them ideal for use in such applications, as they can be safely absorbed by the body over time.

The increase in demand for bioresorbable polymers in the medical industry has several implications for the market. One of the key impacts is the surge in research and development activities aimed at creating high-quality and reliable bioresorbable products. Manufacturers are investing more in developing innovative polymers that meet the specific requirements of medical applications, ensuring their effectiveness and safety.

Additionally, the growth of the medical industry has led to an expansion of applications for these polymers. From sutures and stents to bone screws and drug delivery systems, bioresorbable polymers find a wide range of uses in various medical procedures. The versatility and biocompatibility of these materials make them attractive for medical professionals seeking advanced solutions for patient care.

In conclusion, the growth of the medical industry serves as a significant driver of the global resorbable polymers market. As the medical field continues to evolve and expand, the demand for these biodegradable materials is expected to rise further, driving the market's growth. With ongoing advancements and research, the potential for new applications and improved products in this field is vast.

Advancements in Material Science

Resorbable polymers, also known as bioresorbable polymers, are biodegradable

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materials that the body can naturally absorb after they have served their purpose. These materials find extensive applications in the medical field, including sutures, stents, and drug delivery systems. The advancements in material science have played a pivotal role in driving innovation in the resorbable polymers market.

One significant factor contributing to the growth of this market is the increasing focus on sustainable and eco-friendly materials. As the world becomes more environmentally conscious, there is a rising demand for alternatives to traditional non-degradable materials. This has led to the development of advanced bioresorbable polymers that can replace such materials in numerous applications.

Moreover, the significant investments in research and development have paved the way for the creation of bioresorbable polymers with improved properties. These polymers exhibit enhanced strength, flexibility, and biocompatibility, making them suitable for a wide range of medical applications.

The advancements in material science have had several profound impacts on the resorbable polymers market. Firstly, they have enabled the development of superior bioresorbable polymers, expanding their scope of applications across various industries, especially in the medical field. These polymers offer unique advantages over traditional materials, including reduced environmental impact and improved patient outcomes.

Secondly, these advancements have driven an increased demand for bioresorbable polymers. Industries are recognizing the benefits they offer in terms of sustainability and improved performance, leading to a growing adoption of these materials.

Lastly, the developments in material science have fostered competition among market players, stimulating further innovation and growth in the resorbable polymers market. As companies strive to develop more advanced and efficient materials, the market continues to evolve, offering new opportunities and solutions for various industries.

Overall, the advancements in material science have revolutionized the resorbable polymers market, unlocking new possibilities, and paving the way for sustainable and innovative solutions in healthcare and beyond.

Key Market Challenges

Complexities Associated with Biocompatibility and Safety

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Bioresorbable polymers are highly regarded for their exceptional biocompatibility, which enables them to be safely absorbed by the body once their purpose is fulfilled. This outstanding quality makes them ideal for a wide range of applications in the medical field, including medical devices and drug delivery systems, as well as various biomedical applications.

However, achieving the desired level of biocompatibility is a complex and intricate process. While synthetic polymers can help avoid issues with immunogenicity, they can introduce new challenges in ensuring biocompatibility. Thus, the development of bioresorbable polymers requires a delicate balance to ensure that these materials interact with the body without causing any adverse reactions.

In addition to biocompatibility, safety is another crucial aspect when it comes to bioresorbable polymers. Scientific evaluations have indicated that these polymers are generally safe for use in medical devices. However, their safety profile primarily depends on their design and how they degrade within the body. It is crucial that the degradation process of bioresorbable polymers is both predictable and safe, without causing any harm to the body. This necessitates rigorous testing and stringent quality control measures, adding yet another layer of complexity to the development and production of these materials.

Undoubtedly, the complexities associated with biocompatibility and safety pose significant challenges for the resorbable polymers market. These challenges can impede product development, elevate costs, and create barriers to market entry. Nonetheless, these complexities also serve as drivers for innovation within the market. They compel companies to invest in extensive research and development efforts, leading to the creation of advanced bioresorbable polymers with improved biocompatibility and enhanced safety profiles. By addressing these challenges head-on, the industry can pave the way for groundbreaking advancements in the field of bioresorbable polymers.

Key Market Trends

Growing Focus on Tissue Engineering

Tissue engineering, a highly interdisciplinary field, aims to develop functional tissues to restore, maintain, or enhance damaged tissues or whole organs. It involves the use of resorbable polymers as scaffolds, providing a three-dimensional structure for the growth of new tissue. These polymers, known for their biocompatibility and ability to safely

degrade within the body, are ideal for tissue engineering applications.

The rising focus on regenerative medicine and tissue engineering is driving the demand for resorbable polymers. This growing trend has significant implications for the resorbable polymers market. Firstly, it leads to an increased demand for these materials, contributing to market growth. The application of resorbable polymers in tissue engineering is expected to continue expanding, further fueling the demand.

Moreover, this trend also spurs innovation in the market. With the increasing use of polymers in tissue engineering, companies are motivated to develop advanced bioresorbable polymers with improved properties, such as enhanced strength and flexibility. This drive for innovation pushes the boundaries of what is possible in tissue engineering.

Furthermore, the emphasis on tissue engineering encourages extensive research and development efforts in the field of resorbable polymers. This results in ongoing product developments and a significant increase in investment in research and development activities. Scientists and engineers strive to optimize the properties and performance of resorbable polymers, paving the way for breakthroughs in tissue engineering applications.

In conclusion, the growing focus on tissue engineering represents a significant and transformative trend in the global resorbable polymers market. As the field of tissue engineering continues to evolve and expand, the role of resorbable polymers in this field is set to become increasingly important, positively impacting the market's growth. The continuous advancements in resorbable polymers hold tremendous potential for revolutionizing regenerative medicine and improving patients' lives.

Segmental Insights

Type Insights

Based on the category of type, the others segment emerged as the dominant player in the global market for Resorbable (Bioresorbable) Polymers in 2022. The growth of bio-polymers can be attributed to several key characteristics. Firstly, the enhanced quality of these products sets them apart from their competitors, ensuring customer satisfaction and loyalty. Additionally, their exceptional resistance against adverse environmental conditions provides added durability and reliability. These factors combined contribute to the increasing popularity and success of this segment in the market.

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Application Insights

The orthopedics segment is projected to experience rapid growth during the forecast period. The growth of the biomedical segment can be attributed to the wide range of products it offers, such as sutures, screws, stents, and pins, which are utilized in various medical procedures. These products find extensive usage in biomedical settings, including the development of prostheses and the repair of injured joints, among others, thereby driving the growth of this segment.

One notable advancement in this field is the use of resorbable polymer-based implants, which not only enhance patient care and clinical outcomes but also reduce the need for additional procedures and surgeries, resulting in cost savings. Furthermore, the drug delivery application within the biomedical segment is expected to experience the fastest growth rate during the forecast period, showcasing the continuous innovation and evolving nature of this industry.

Regional Insights

North America emerged as the dominant player in the Global Resorbable (Bioresorbable) Polymers Market in 2022, holding the largest market share in terms of value. The increasing consumption of products in drug delivery and orthopedics applications in the region can be attributed to the growth of the bioresorbable polymers sector in North America. The U.S., being a major hub for research and development in the healthcare industry, plays a significant role in driving the advancements in this field. The rising demand for orthopedics and drug delivery applications further supports the demand for bioresorbable polymers in this region. As a result, the market for bioresorbable polymers is expected to witness continued growth in North America.

Key Market Players

Corbion NV

Poly-Med, Inc.

Foster Corporation

Evonik Industries AG

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KLS-Martin Limited

3d Biotek LLC

Degradable solutions AG

Koninklijke DSM N.V.

FUTERRO S.A.

Abbott Laboratories Inc

Report Scope:

In this report, the Global Resorbable (Bioresorbable) Polymers Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Resorbable (Bioresorbable) Polymers Market, By Type:

Agro-Polymers

Biopolyesters

Others

Resorbable (Bioresorbable) Polymers Market, By Application:

Orthopedics

Cardiac Implants

Dental Implants

Oral Drug Delivery

Others

Resorbable (Bioresorbable) Polymers Market, By Region:

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North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia-Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

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Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Kuwait

Turkey

Egypt

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Resorbable (Bioresorbable) Polymers Market.

Available Customizations:

Global Resorbable (Bioresorbable) Polymers Market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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