

## **Biomaterials - A Global Market Overview**

Market Report | 2025-02-03 | 240 pages | Industry Experts

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### **Report description:**

#### Global Biomaterials Market Trends and Outlook

Biomaterials are natural or synthetic materials designed for interaction with biological systems in medical applications aimed at supporting, mending, or substituting damaged tissues or organs. These materials, which include metals, ceramics, polymers, and natural substances, are essential in various fields such as cardiovascular, orthopedics, dentistry, neurology, and plastic surgery applications. Biomaterials are used in products such as implants, stents, artificial joints, pacemakers, and tissue regeneration scaffolds. With characteristics such as biocompatibility, mechanical strength, and biodegradability, biomaterials improve medical outcomes by integrating effectively with living tissues. Their adaptability also extends to advanced technologies, including drug delivery systems, wound healing products, regenerative medicine, and plastic surgery, where they facilitate tissue growth, recovery, and cosmetic enhancements. The rising success of biomaterials is fueled by advancements in material science, enhanced surgical methods, and a greater comprehension of the relationship between biological systems and biomaterial-based devices. Biomaterials are essential to modern healthcare, playing a key role in improving patient outcomes and advancing medical knowledge.

The increasing incidence of cardiovascular diseases, orthopedic issues, arthritis, and sports injuries is increasing the demand for implantable biomaterials as chronic health conditions worsen due to unhealthy lifestyles and an aging demographic. Furthermore, the expansion of regenerative medicine, improvements in 3D printing and additive manufacturing, and breakthroughs in biodegradable biomaterials are driving the market expansion. The shift towards personalized medicine, the integration of nanotechnology, and the use of biomaterials in wound healing, tissue regeneration, and drug delivery systems are also contributing to growth. Furthermore, increased healthcare expenditures and government support for research and development, particularly in developing countries, enhance the demand for biomaterials. The growing elderly population, along with the rise in musculoskeletal disorders and chronic ailments like diabetes and cardiovascular diseases, is boosting the need for advanced implantable devices and medical technologies. Simultaneously, innovations in smart biomaterials and collaborative efforts within the healthcare sector are driving sustained market expansion.

#### Biomaterials Regional Market Analysis

In 2024, North America held 37.5% of the global biomaterials market, driven by a robust healthcare infrastructure, strong government R&D support, and a high prevalence of orthopedic and cardiovascular issues. The region's dominance is bolstered by

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key market players, technological advancements, and favorable regulatory frameworks, including FDA approvals. The growing demand for advanced biomaterials in implants and wound care further strengthens North America's leadership. Conversely, the Asia-Pacific region is projected to experience the fastest growth, with a CAGR of 15.8% during the forecast period 2024-2030, driven by improvements in healthcare infrastructure, rising healthcare spending, and a growing need for orthopedic, cardiovascular, and dental biomaterials. Countries like China, India, and Japan are making significant contributions, as their expanding middle-class populations, economic development, and government initiatives for healthcare

#### Biomaterials Market Analysis by Type

Metallic biomaterials dominated the global market in 2024 with an estimated share of 37.7%, owing to their strength, compatibility with biological systems, and resistance to corrosion, particularly in orthopedic implants, dental devices, and cardiovascular applications. Titanium, stainless steel, and cobalt-chromium alloys are key materials due to their durability and ability to maintain structural integrity over the long term. In contrast, the polymers segment is expected to witness the fastest growth, with a projected CAGR of 14.9% during the 2024-2030 analysis period, driven by their application in soft tissue treatments, plastic surgery, and advances in tissue engineering. Their adaptability, biocompatibility, and recent innovations, such as self-healing properties, make them well-suited for advanced medical applications, further boosting their market growth.

#### Biomaterials Market Analysis by Application

The orthopedic application segment is expected to dominate with a 27.7% share in 2024, primarily due to the increasing use of metallic biomaterials, which are favored for their excellent load-bearing capabilities in orthopedic implants. Ongoing developments and investments in orthopedic implants are driving market expansion. In orthopedics, biomaterials aid in tissue regeneration and the repair of bones, cartilage, and ligaments. Conversely, the plastic surgery segment is anticipated to experience the fastest growth, with a CAGR of 16.5% from 2024 to 2030. This rapid growth is driven by the rising demand for cosmetic procedures and reconstructive surgeries, along with advancements in biomaterial technologies, including customizable implants and 3D-printed scaffolds. The growing aging population and the desire to maintain a youthful appearance further boost the demand for biomaterials in plastic surgery.

#### Biomaterials Market Report Scope

This global report on Biomaterials analyzes the global and regional markets based on type and application for the period 2021-2030 with forecasts from 2024 to 2030 in terms of value in US\$. In addition to providing profiles of major companies operating in this space, the latest corporate and industrial developments have been covered to offer a clear panorama of how and where the market is progressing.

#### Key Metrics

Historical Period: 2021-2023

Base Year: 2024

Forecast Period: 2024-2030

Units: Value market in US\$

Companies Mentioned: 35+

#### Biomaterials Market by Geographic Region

- North America (The United States, Canada and Mexico)
- Europe (Germany, The United Kingdom, France, Spain and Rest of Europe)
- Asia-Pacific (Japan, China, India, South Korea and Rest of Asia-Pacific)
- Rest of World (Brazil, Middle East and Other Countries)

#### Biomaterials Market by Product

- Metallic

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- Polymers
- Ceramics
- Natural

#### Biomaterials Market by Application

- Orthopedic
- Cardiovascular
- Dental
- Plastic Surgery
- Neurology
- Ophthalmology
- Tissue Engineering
- Wound Healing
- Other Applications (Drug Delivery Systems, Gastrointestinal Applications, Bariatric Surgery, Urinary Applications)

#### **Table of Contents:**

##### PART A: GLOBAL MARKET PERSPECTIVE

##### 1. INTRODUCTION

- Product Outline
- Biomaterials Defined
- Biomaterial Types
  - o□Metallic
  - o□Polymers
  - o□Ceramics
  - o□Natural
- Biomaterial Applications
  - o□Orthopedic
  - o□Cardiovascular
  - o□Dental
  - o□Plastic Surgery
  - o□Neurology
  - o□Ophthalmology
  - o□Tissue Engineering
  - o□Wound Healing
  - o□Other Applications (Drug Delivery Systems, Gastrointestinal Applications, Bariatric Surgery, Urinary Applications)

##### 2. Key Market Trends

##### 3. Key Global Players

- BASF SE
- 3-D Matrix, Inc
- aap Implantate AG
- Abbott Laboratories
- Acumed LLC
- Arthrex, Inc.
- Artivion, Inc.
- B. Braun Melsungen AG
- Baxter International Inc.

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- Berkeley Advanced Biomaterials
- Biocomposites Ltd.
- Biomaterials Korea, Inc.
- Boston Scientific Corporation
- CAM Bioceramics B.V.
- Carpenter Technology Corporation
- Celanese Corporation
- Ceramtec GmbH
- Collagen Solutions Plc
- CoorsTek Inc.
- Corbion N.V.
- Covalon Technologies Ltd.
- Dentsply Sirona Inc.
- DSM-Firmenich
- Evonik Industries AG
- Exactech, Inc.
- Heraeus Medical GmbH
- Invibio (part of the Victrex plc group)
- Johnson & Johnson
- Medtronic plc
- MilliporeSigma
- Organogenesis, Inc.
- Regenity Biosciences
- RTI Surgical, Inc
- Smith & Nephew Plc
- Straumann Holding AG
- Stryker Corporation
- Syensqo SA
- Zimmer Biomet Holdings, Inc.

#### 4. Key Business & Product Trends

#### 5. Global Market Overview

- Global Biomaterials Market Overview by Product
- o□Biomaterials Product Market Overview by Global Region
- Metallic
- Polymers
- Ceramics
- Natural
- Global Biomaterials Market Overview by Application
- o□Biomaterials Application Market Overview by Global Region
- Orthopedic
- Cardiovascular
- Dental
- Plastic Surgery
- Neurology
- Ophthalmology
- Tissue Engineering
- Wound Healing ?

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-□Other Applications

## PART B: REGIONAL MARKET PERSPECTIVE

### Global Biomaterials Market Overview by Geographic Region

#### REGIONAL MARKET OVERVIEW

##### 6. North America

-□North American Biomaterials Market Overview by Geographic Region

-□North American Biomaterials Market Overview by Product

-□North American Biomaterials Market Overview by Application

-□Country-wise Analysis of North American Biomaterials Market

o□The United States

-□United States Biomaterials Market Overview by Product

-□United States Biomaterials Market Overview by Application

o□Canada

-□Canadian Biomaterials Market Overview by Product

-□Canadian Biomaterials Market Overview by Application

o□Mexico

-□Mexican Biomaterials Market Overview by Product

-□Mexican Biomaterials Market Overview by Application

##### 7. Europe

-□European Biomaterials Market Overview by Geographic Region

-□European Biomaterials Market Overview by Product

-□European Biomaterials Market Overview by Application

-□Country-wise Analysis of European Biomaterials Market

o□Germany

-□German Biomaterials Market Overview by Product

-□German Biomaterials Market Overview by Application

o□France

-□French Biomaterials Market Overview by Product

-□French Biomaterials Market Overview by Application

o□The United Kingdom

-□United Kingdom Biomaterials Market Overview by Product

-□United Kingdom Biomaterials Market Overview by Application

o□Italy

-□Italian Biomaterials Market Overview by Product

-□Italian Biomaterials Market Overview by Application

o□Spain

-□Spanish Biomaterials Market Overview by Product

-□Spanish Biomaterials Market Overview by Application

o□Rest of Europe

-□Rest of Europe Biomaterials Market Overview by Product

-□Rest of Europe Biomaterials Market Overview by Application

##### 8. Asia-Pacific

-□Asia-Pacific Biomaterials Market Overview by Geographic Region

-□Asia-Pacific Biomaterials Market Overview by Product

-□Asia-Pacific Biomaterials Market Overview by Application

-□Country-wise Analysis of Asia-Pacific Biomaterials Market

o□Japan

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- [] Japanese Biomaterials Market Overview by Product
- [] Japanese Biomaterials Market Overview by Application
- o [] China
- [] Chinese Biomaterials Market Overview by Product
- [] Chinese Biomaterials Market Overview by Application
- o [] India
- [] Indian Biomaterials Market Overview by Product
- [] Indian Biomaterials Market Overview by Application
- o [] South Korea
- [] South Korean Biomaterials Market Overview by Product
- [] South Korean Biomaterials Market Overview by Application
- o [] Rest of Asia-Pacific
- [] Rest of Asia-Pacific Biomaterials Market Overview by Product
- [] Rest of Asia-Pacific Biomaterials Market Overview by Application
- 9. Rest of World
- [] Rest of World Biomaterials Market Overview by Geographic Region
- [] Rest of World Biomaterials Market Overview by Product
- [] Rest of World Biomaterials Market Overview by Application
- [] Country-wise Analysis of Rest of World Biomaterials Market
- o [] Brazil
- [] Brazilian Biomaterials Market Overview by Product
- [] Brazilian Biomaterials Market Overview by Application
- o [] Middle East
- [] Middle East Biomaterials Market Overview by Product
- [] Middle East Biomaterials Market Overview by Application
- o [] Other Rest of World
- [] Other Rest of World Biomaterials Market Overview by Product
- [] Other Rest of World Biomaterials Market Overview by Application

PART C: GUIDE TO THE INDUSTRY

PART D: ANNEXURE

1. RESEARCH METHODOLOGY
2. FEEDBACK

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