

Biomaterials Market by Type (Metallic (Gold, Magnesium), Ceramic (Aluminum Oxide, Carbon), Polymer (Polyethylene, Polyester), Natural (Hyaluronic acid, Collagen, Gelatin)), Application (Orthopedic, Dental, CVD, Ophthalmology) - Global Forecast to 2029

Market Report | 2024-03-07 | 664 pages | MarketsandMarkets

#### **AVAILABLE LICENSES:**

- Single User \$4950.00
- Multi User \$6650.00
- Corporate License \$8150.00
- Enterprise Site License \$10000.00

## Report description:

The global biomaterialss market is projected to reach USD 64.2 Bn by 2029 from USD 45.2 Bn in 2024, at a CAGR of 7.3% during the forecast period of 2024 to 2029. Factors such as the Increasing awareness of sustainable and biodegradable materials are predicted to uplift the market in the coming years. Additionally, rising prevalence of chronic diseases and aging populations worldwide is driving the demand for medical implants which will provide lucrative market growth. However, biocompatibility issues associated with biomaterials are predicted to restrict the market.

"The metallic biomaterials segment held the dominant share in the biomaterials market."

Based on type, the global biomaterials market is segmented into polymeric (polymethylmethacrylate, polyethylene, polyester, polyvinylchloride, silicone rubber, nylon, polyetheretherketone, other polymeric biomaterials), metallic (stainless steel, titanium & titanium alloys, cobalt-chrome alloys, gold, silver, magnesium, and other metallic biomaterials), natural (hyaluronic acid, collagen, fibrin, cellulose, chitin, alginate, gelatin, chitosan, silk, other natural biomaterials), and ceramic (calcium phosphate, zirconia, aluminum oxide, calcium sulfate, carbon and glass). The conventional use of metallic biomaterials is expected to drive the expansion of the biomaterials market.

"The largest share of 2023 was occupied by the Orthopedic segment"

Based on application, the biomaterials market is classified into Tissue Engineering (Inorganic Nanoparticles, Nanomaterials, Scaffolds), Ophthalmology (Intraocular Lenses, Synthetic Corneas, Contact Lenses, Functional Replacement of Ocular Tissues, Other Ophthalmology Products), Neurological/Central Nervous System, (Neural Stem Cell Encapsulation Products, Cortical Neural

**Scotts International. EU Vat number: PL 6772247784** tel. 0048 603 394 346 e-mail: support@scotts-international.com

Prosthetics, Hydrogel Scaffolds, Shunting Systems), Cardiovascular (Guidewires, Catheters, Implantable Cardiac Defibrillators, Stents, Sensors, Vascular Grafts, Heart Valves, Other Cardiovascular Products), Wound Healing (Internal Tissue Sealants, Surgical Hemostats, Hernia Meshes, Wound Closure Devices, [Staples, Sutures], Adhesion Barriers, Skin Substitutes), Urinary (Urethral Stents, Urinary Catheters, Other Urinary Products), Dental (Tissue Regeneration Materials, Dental Bone Grafts & Substitutes, Dental Membranes, Dental Implants), Plastic Surgery (Acellular Dermal Matrices, Facial Wrinkle Treatment Devices, Bioengineered Skins, Craniofacial Surgery Products, Soft Tissue Fillers, Peripheral Nerve Repair Devices), and Other Applications (Bariatric Surgery, Gastrointestinal, Drug Delivery Systems). This is due to the rise in the prevalence of musculoskeletal injuries, osteoporosis, and osteoarthritis and other orthopedic disorders.

## "APAC region estimated to grow at a faster pace."

The biomaterials market is segmented into North America, Europe, Asia Pacific, Latin America, Middle East and Africa. APAC region is projected to grow at the highest CAGR during the forecast period. are expected to support biomaterials market growth in the region. Increasing awareness of personalized medicine, technological advancements and innovation and rising incidence of chronic diseases are the reasons which support market growth in this region.

The primary interviews conducted for this report can be categorized as follows:

- By Respondent: Supply Side- 80%, and Demand Side 20%
- -[By Designation (Supply Side): Managers 45%, CXOs & Directors 30%, Executives- 25%
- By Region: North America -40%, Europe -25%, Asia-Pacific -20%, Latin America -10%, MEA-5%

List of Companies Profiled in the Report:

- -□BASF SE (Germany)
- Covestro AG (Germany)
- -□Celanese Corporation (US)
- -□Carpenter Technology Corporation (US)
- -□DSM (Netherlands)
- -□Corbion NV (Netherlands)
- -□Evonik Industries AG (Germany)
- -□Victrex Plc (UK)
- -□CeramTec GmbH (Germany)
- Mitsubishi Chemical Group Corporation (Japan)
- -[CoorsTek Inc. (US)
- -□Berkeley Advanced Biomaterials (US)
- -□CAM Bioceramics B.V. (Netherlands)
- □Zeus Company Inc. (US)
- AMETEK Inc.(US)
- -□GELITA AG (Germany)
- The RDI Group (Collagen Solutions (US) LLC)
- -□Biocomposites (England)
- ¬Noble Biomaterials (US)
- Regenity (US)
- Kuraray Co. Ltd. (Japan)
- -□Solesis (US)
- -∏Institut Straumann AG (Switzerland)
- -□Foster Corporation (US)
- -□CDI Products (US).

Research Coverage:

This report provides a detailed picture of the biomaterials market. It aims to estimate the size and future growth potential of the

Scotts International, EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

market across different segments, such as type, application and region. The report also includes an in-depth competitive analysis of the key market players, along with their company profiles, recent developments, and key market strategies.

#### Key Benefits of Buying the Report:

The report will help market leaders/new entrants by providing them with the closest approximations of the revenue numbers for the overall biomaterials market and its subsegments. It will also help stakeholders better understand the competitive landscape and gain more insights to better position their business and make suitable go-to-market strategies. This report will enable stakeholders to understand the market's pulse and provide them with information on the key market drivers, restraints, opportunities, and challenges.

The report provides insights on the following pointers:

- Analysis of key drivers (Growing demand for biomaterials in wound healing and plastic surgery, growing use of biomaterials in various therapeutic areas, rising funding and investments in regenerative and personized medicine and growing demand for implantable devices), restraints (Biocompatibility issues), opportunities (Growing interest in bioabsorbable biomaterials, expanding healthcare market in emerging economies, rising opportunities in personalized biomaterials, smart biomaterials, nanoengineered biomaterials, and sustainable biomaterials) and challenges (durability and long-term performance issues) are influencing the growth of biomaterials market.
- Product Development/Innovation: Detailed insights on newly launched products of the biomaterials market.
- Market Development: Comprehensive information about lucrative markets the report analyses the biomaterials market across varied regions.
- Market Diversification: Exhaustive information about new products, untapped geographies, recent developments, and investments in the biomaterials market.
- Competitive Assessment: In-depth assessment of market shares, growth strategies, and product offerings of leading players include BASF SE (Germany), Covestro AG (Germany), Celanese Corporation (US), Carpenter Technology Corporation (US), DSM (Netherlands), Corbion NV (Netherlands), Evonik Industries AG (Germany), Victrex Plc (UK), CeramTec GmbH (Germany), Mitsubishi Chemical Group Corporation (Japan), CoorsTek Inc. (US), Berkeley Advanced Biomaterials (US), CAM Bioceramics B.V. (Netherlands), Zeus Company Inc. (US), AMETEK Inc.(US), GELITA AG (Germany) and among others in the biomaterials market.

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

1⊓INTRODUCTION⊓89

- 1.1 STUDY OBJECTIVES 89
- 1.2 MARKET DEFINITION 89
- 1.2.1 | INCLUSIONS & EXCLUSIONS | 89
- 1.3 MARKET SCOPE 90
- 1.3.1 MARKETS COVERED 90
- 1.3.2 YEARS CONSIDERED 91
- 1.3.3 CURRENCY CONSIDERED 91
- 1.4 RESEARCH LIMITATIONS 91
- 1.5∏STAKEHOLDERS∏92
- 1.6□SUMMARY OF CHANGES□92
- 1.7 RECESSION IMPACT 93
- 2 RESEARCH METHODOLOGY 94
- 2.1 RESEARCH DATA 94

FIGURE 1∏RESEARCH DESIGN∏94

- 2.1.1□SECONDARY DATA□95
- 2.1.2 PRIMARY DATA 96

FIGURE 2 BIOMATERIALS MARKET: BREAKDOWN OF PRIMARIES 96

2.2 MARKET SIZE ESTIMATION 97

Scotts International, EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com www.scotts-international.com

FIGURE 3 BIOMATERIALS MARKET SIZE ESTIMATION (SUPPLY-SIDE ANALYSIS), 2023 97

FIGURE 4 MARKET SIZE ESTIMATION: APPROACH 1 (REVENUE SHARE ANALYSIS), 2023 98

FIGURE 5 | ILLUSTRATIVE EXAMPLE OF BASE SE: REVENUE SHARE ANALYSIS, 2023 | 98

2.2.1 INSIGHTS FROM PRIMARIES 100

FIGURE 6 MARKET VALIDATION FROM PRIMARY EXPERTS 100

2.2.2 SEGMENT ASSESSMENT (BY TYPE AND APPLICATION) □100

FIGURE 7 MARKET SIZE ESTIMATION METHODOLOGY: TOP-DOWN APPROACH 100

2.3 GROWTH RATE ASSUMPTIONS 101

FIGURE 8 BIOMATERIALS MARKET: CAGR PROJECTIONS, 2024-2029 102

FIGURE 9 IBIOMATERIALS MARKET: GROWTH ANALYSIS OF DRIVERS, RESTRAINTS, OPPORTUNITIES, AND CHALLENGES 102

2.4 MARKET BREAKDOWN AND DATA TRIANGULATION 103

FIGURE 10 DATA TRIANGULATION METHODOLOGY 103

2.5 □ STUDY ASSUMPTIONS □ 104

2.6 RISK ANALYSIS 104

2.7 IMPACT OF ECONOMIC RECESSION ON BIOMATERIALS MARKET 104

TABLE 1 GLOBAL INFLATION RATE PROJECTIONS, 2021-2028 (% GROWTH) 105

TABLE 2 US HEALTH EXPENDITURE, 2019-2022 (USD MILLION) 105

TABLE 3∏US HEALTH EXPENDITURE, 2023-2027 (USD MILLION)∏105

3 EXECUTIVE SUMMARY 106

FIGURE 11∏BIOMATERIALS MARKET, BY TYPE, 2024 VS 2029 (USD BILLION)∏106

FIGURE 12 BIOMATERIALS MARKET FOR METALLIC BIOMATERIALS, BY TYPE, 2024 VS. 2029 (USD MILLION) 107

FIGURE 13 BIOMATERIALS MARKET FOR NATURAL BIOMATERIALS, BY TYPE, 2024 VS. 2029 (USD MILLION) 108

FIGURE 14 REGIONAL SNAPSHOT OF BIOMATERIALS MARKET 109

4□PREMIUM INSIGHTS□110

4.1□BIOMATERIALS MARKET OVERVIEW□110

FIGURE 15 INCREASING DEMAND FOR IMPLANTABLE DEVICES TO DRIVE MARKET 110

4.2 NORTH AMERICA: BIOMATERIALS MARKET, BY TYPE AND COUNTRY (2023) 111

FIGURE 16 US AND METALLIC BIOMATERIALS COMMANDED LARGEST SHARE IN NORTH AMERICAN BIOMATERIALS MARKET IN 2023 111

4.3∏BIOMATERIALS MARKET, BY TYPE∏112

FIGURE 17 METALLIC BIOMATERIALS TO WITNESS HIGHEST GROWTH RATE DURING FORECAST PERIOD 112

4.4∏BIOMATERIALS MARKET, BY APPLICATION∏113

FIGURE 18 ORTHOPEDIC SEGMENT TO GROW AT HIGHEST CAGR DURING STUDY PERIOD 113

5 MARKET OVERVIEW 114

5.1□INTRODUCTION□114

5.2 MARKET DYNAMICS 114

FIGURE 19 BIOMATERIALS MARKET: DRIVERS, RESTRAINTS, OPPORTUNITIES, AND CHALLENGES 114

5.2.1 DRIVERS 115

5.2.1.1 Growing demand for biomaterials in wound healing and plastic surgery 115

 $5.2.1.2 \square Growing$  use of biomaterials in various therapeutic areas  $\square 115$ 

5.2.1.3 Rising funding and investments in regenerative and personalized medicine 116

 $5.2.1.4 \square Growing \ demand \ for \ implantable \ devices \square 116$ 

5.2.2 RESTRAINTS 117

5.2.2.1 Biocompatibility issues 117

5.2.3 OPPORTUNITIES 118

5.2.3.1 Growing interest in bioabsorbable biomaterials 118

5.2.3.2 Expanding healthcare market in emerging economies 118

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

5.2.3.3 Rising opportunities in personalized, smart, nanoengineered, and sustainable biomaterials 119

5.2.4 CHALLENGES 120

5.2.4.1 Durability and long-term performance issues 120

5.3 TRENDS/DISRUPTIONS IMPACTING CUSTOMERS' BUSINESSES 121

FIGURE 20 BIOMATERIALS MARKET: TRENDS/DISRUPTIONS IMPACTING CUSTOMERS' BUSINESSES 121

5.4 PRICING ANALYSIS 121

5.4.1 AVERAGE SELLING PRICE TREND OF KEY PLAYERS, BY PRODUCT 121

TABLE 4 AVERAGE SELLING PRICE OF BIOMATERIAL PRODUCTS 121

TABLE 5 AVERAGE SELLING TREND OF BIOMATERIAL PRODUCTS, BY REGION 122

5.5 VALUE CHAIN ANALYSIS 123

FIGURE 21 ☐ BIOMATERIALS MARKET: VALUE CHAIN ANALYSIS ☐ 123

5.6 SUPPLY CHAIN ANALYSIS 124

FIGURE 22 BIOMATERIALS MARKET: SUPPLY CHAIN ANALYSIS 124 TABLE 6 BIOMATERIALS MARKET: SUPPLY CHAIN ANALYSIS 125

5.7 ECOSYSTEM ANALYSIS 126

FIGURE 23 BIOMATERIALS MARKET: ECOSYSTEM/MARKET MAP 126

5.7.1 METALLIC BIOMATERIALS VENDORS 126

TABLE 7 METALLIC BIOMATERIALS VENDORS 126

5.7.2 CERAMIC BIOMATERIALS VENDORS 127

TABLE 8□CERAMIC BIOMATERIALS VENDORS□127

5.7.3 POLYMERIC BIOMATERIALS VENDORS 127

TABLE 9 POLYMERIC BIOMATERIALS VENDORS 127

5.7.4 NATURAL BIOMATERIALS VENDORS 128

TABLE 10 NATURAL BIOMATERIALS VENDORS 128

5.7.5 BIOMATERIALS END USERS 128

TABLE 11□BIOMATERIALS END USERS□129

5.7.6 BIOMATERIALS REGULATORY BODIES 129

TABLE 12 BIOMATERIALS REGULATORY BODIES 129

5.8 TECHNOLOGY ANALYSIS 130

5.9 PATENT ANALYSIS ☐ 131

5.9.1 METHODOLOGY 131

5.9.2 PATENTS FILED, BY DOCUMENT TYPE, 2014-2024 131

TABLE 13 PATENTS FILED, 2014-2024 131

5.9.3 INNOVATION AND PATENT APPLICATIONS 131

FIGURE 24 TOTAL NUMBER OF PATENTS GRANTED, 2014-2023 131

5.9.4 TOP APPLICANTS 132

FIGURE 25 TOP TEN PLAYERS WITH HIGHEST NUMBER OF PATENT APPLICATIONS, 2014-2024 132

FIGURE 26 REGIONAL ANALYSIS OF PATENTS GRANTED, 2014-2024 132

TABLE 14 TOP 12 PATENT OWNERS IN BIOMATERIALS MARKET, 2014-2024 133

TABLE 15 PATENTS IN BIOMATERIALS MARKET, 2023 133

5.10 TRADE DATA 135

5.10.1 STAINLESS STEEL 135

TABLE 16 $\square$ IMPORT VALUE FOR STAINLESS STEEL, 2018-2022 (USD) $\square$ 135

TABLE 17∏EXPORT VALUE FOR STAINLESS STEEL, 2018-2022 (USD)∏136

TABLE 18 IMPORT VOLUME FOR STAINLESS STEEL, 2018-2022 (TONS) 136

TABLE 19  $\square$ EXPORT VOLUME FOR STAINLESS STEEL, 2018-2022 (TONS)  $\square$ 137

5.10.2 SILVER 137

Scotts International, EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

TABLE 20 IMPORT VALUE FOR SILVER, 2018-2022 (USD) 137

TABLE 21 EXPORT VALUE FOR SILVER, 2018-2022 (USD) 138

TABLE 22 IMPORT VOLUME FOR SILVER, 2018-2022 (TONS) 138

TABLE 23 EXPORT VOLUME FOR SILVER, 2018-2022 (TONS) 139

5.10.3 ALUMINUM OXIDE 139

TABLE 24 IMPORT VALUE FOR ALUMINUM OXIDE, 2018-2022 (USD) 139

TABLE 25∏EXPORT VALUE FOR ALUMINUM OXIDE, 2018-2022 (USD)∏140

TABLE 26 IMPORT VOLUME FOR ALUMINUM OXIDE, 2018-2022 (TONS) 140

TABLE 27 EXPORT VOLUME FOR ALUMINUM OXIDE, 2018-2022 (TONS) 141

5.10.4 SILICONE 141

TABLE 28∏IMPORT VALUE FOR SILICONE, 2018-2022 (USD)∏141

TABLE 29∏EXPORT VALUE FOR SILICONE, 2018-2022 (USD)∏142

TABLE 30∏IMPORT VOLUME FOR SILICONE, 2018-2022 (TONS)∏142

TABLE 31 EXPORT VOLUME FOR SILICONE, 2018-2022 (TONS) 143

5.10.5 CELLULOSE 143

TABLE 32⊓IMPORT VALUE FOR CELLULOSE, 2018-2022 (USD) □143

TABLE 33 EXPORT VALUE FOR CELLULOSE, 2018-2022 (USD) 144

TABLE 34∏IMPORT VOLUME FOR CELLULOSE, 2018-2022 (TONS)∏144

TABLE 35 EXPORT VOLUME FOR CELLULOSE, 2018-2022 (TONS) 145

5.10.6 GELATIN 145

TABLE 36 IMPORT VALUE FOR GELATIN, 2018-2022 (USD) 145

TABLE 37□EXPORT VALUE FOR GELATIN, 2018-2022 (USD)□146

TABLE 38∏IMPORT VOLUME FOR GELATIN, 2018-2022 (TONS)∏146

TABLE 39∏EXPORT VOLUME FOR GELATIN, 2018-2022 (TONS)∏147

5.11 KEY CONFERENCES & EVENTS IN 2024-2025 147

TABLE 40 BIOMATERIALS CONFERENCES IN 2024-2025 147

5.12 REGULATORY LANDSCAPE 153

5.12.1 FDA REGULATIONS ON BIOMATERIALS 153

5.12.2 REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS 153

TABLE 41∏NORTH AMERICA: REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS∏153

TABLE 42 EUROPE: REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS 154

TABLE 43∏ASIA PACIFIC: REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS∏155

TABLE 44⊓REST OF THE WORLD: REGULATORY BODIES. GOVERNMENT AGENCIES. AND OTHER ORGANIZATIONS⊓156

5.13 PORTER'S FIVE FORCES ANALYSIS 157

TABLE 45 BIOMATERIALS MARKET: PORTER'S FIVE FORCES ANALYSIS 157

5.13.1 THREAT OF NEW ENTRANTS 157

5.13.2□THREAT OF SUBSTITUTES□158

5.13.3 BARGAINING POWER OF BUYERS 158

5.13.4 BARGAINING POWER OF SUPPLIERS 158

5.13.5 Degree of Competition 158

5.14 KEY STAKEHOLDERS & BUYING CRITERIA 159

5.14.1 KEY STAKEHOLDERS IN BUYING PROCESS 159

TABLE 46 | INFLUENCE OF STAKEHOLDERS ON BUYING PROCESS FOR TOP THREE END USERS | 159

5.14.2 BUYING CRITERIA FOR BIOMATERIAL PRODUCTS 159

FIGURE 27 KEY BUYING CRITERIA FOR END USERS 159

TABLE 47 KEY BUYING CRITERIA FOR TOP THREE END USERS 160

6 BIOMATERIALS MARKET, BY TYPE 161

Scotts International, EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

## 6.1∏INTRODUCTION∏162

TABLE 48 IMPORTANT PROPERTIES OF BIOMATERIALS, BY APPLICATION 162

TABLE 49 BIOMATERIALS MARKET, BY TYPE, 2022-2029 (USD MILLION) 163

6.2 METALLIC BIOMATERIALS 163

TABLE 50 BIOMATERIALS MARKET FOR METALLIC BIOMATERIALS, BY TYPE, 2022-2029 (USD MILLION) 164

TABLE 51[BIOMATERIALS MARKET FOR METALLIC BIOMATERIALS, BY REGION, 2022-2029 (USD MILLION)[]164

6.2.1 STAINLESS STEEL 165

6.2.1.1 Stainless steel to command largest share in metallic biomaterials segment during forecast period 165

TABLE 52 STAINLESS STEEL MARKET, BY REGION, 2022-2029 (USD MILLION) 165

6.2.2 TITANIUM & TITANIUM ALLOYS 166

6.2.2.1∏Growing number of joint replacement procedures to aid segment growth∏166

TABLE 53 TITANIUM & TITANIUM ALLOYS MARKET, BY REGION, 2022-2029 (USD MILLION) 166

6.2.3 COBALT-CHROME ALLOYS 167

6.2.3.1 Low cost and high corrosion resistance to propel segment growth 167

TABLE 54∏COBALT-CHROME ALLOYS MARKET, BY REGION, 2022-2029 (USD MILLION)∏167

6.2.4 SILVER 167

6.2.4.1 Toxic properties and low aesthetic appeal to limit segment growth 167

TABLE 55 SILVER MARKET, BY REGION, 2022-2029 (USD MILLION) 168

6.2.5 GOLD 168

6.2.5.1 ☐Increasing use in drug delivery, gene therapy, diagnosis, and tissue regeneration to drive segment ☐168

TABLE 56 GOLD MARKET, BY REGION, 2022-2029 (USD MILLION) 169

6.2.6 | MAGNESIUM | 169

6.2.6.1 High biocompatibility and low weight to support market growth 169

TABLE 57 MAGNESIUM MARKET, BY REGION, 2022-2029 (USD MILLION) 170

6.2.7 OTHER METALLIC BIOMATERIALS 170

TABLE 58[OTHER METALLIC BIOMATERIALS MARKET, BY REGION, 2022-2029 (USD MILLION)[171

6.3 POLYMERIC BIOMATERIALS 171

TABLE 59 APPLICATIONS OF SYNTHETIC POLYMERS 172

TABLE 60 BIOMATERIALS MARKET FOR POLYMERIC BIOMATERIALS, BY TYPE, 2022-2029 (USD MILLION) 172

TABLE 61 BIOMATERIALS MARKET FOR POLYMERIC BIOMATERIALS, BY REGION, 2022-2029 (USD MILLION) 173

6.3.1 POLYMETHYLMETHACRYLATE 173

6.3.1.1 Better biocompatibility and improved safety to drive segment 173

TABLE 62 POLYMETHYLMETHACRYLATE MARKET, BY REGION, 2022-2029 (USD MILLION) 174

6.3.2 POLYETHYLENE 174

6.3.2.1 Better wear and tear resistance to boost segment growth 174

TABLE 63  $\square$  POLYETHYLENE MARKET, BY REGION, 2022-2029 (USD MILLION)  $\square$  175

6.3.3 POLYESTER 175

6.3.3.1 Better biodegradability and biocompatibility to propel segment growth 175

TABLE 64 POLYESTER MARKET, BY REGION, 2022-2029 (USD MILLION) 176

6.3.4 POLYVINYLCHLORIDE 176

6.3.4.1 Affordability, high tensile strength, and ease of processing to drive segment growth 176

TABLE 65 POLYVINYLCHLORIDE MARKET, BY REGION, 2022-2029 (USD MILLION) 176

6.3.5∏SILICONE RUBBER∏177

6.3.5.1 Non-reactivity, stability, and better resistance to extreme environments and temperatures to aid segment growth 177

TABLE 66∏SILICONE RUBBER MARKET, BY REGION, 2022-2029 (USD MILLION)∏177

6.3.6 NYLON 177

6.3.6.1 Increased use in biological applications and gastrointestinal surgeries to aid segment growth 177

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

TABLE 67 NYLON MARKET, BY REGION, 2022-2029 (USD MILLION) 178

6.3.7□POLYETHERETHERKETONE□178

6.3.7.1□High resistance to thermal degradation and aqueous environments to support segment growth□178 TABLE 68□POLYETHERETHERKETONE MARKET, BY REGION, 2022-2029 (USD MILLION)□178

6.3.8 OTHER POLYMERIC BIOMATERIALS 179

TABLE 69  $\square$  OTHER POLYMERIC BIOMATERIALS MARKET, BY REGION, 2022-2029 (USD MILLION)  $\square$  179

6.4□CERAMIC BIOMATERIALS□179

TABLE 70 BIOMATERIALS MARKET FOR CERAMIC BIOMATERIALS, BY TYPE, 2022-2029 (USD MILLION) 180

TABLE 71 BIOMATERIALS MARKET FOR CERAMIC BIOMATERIALS, BY REGION, 2022-2029 (USD MILLION) 180

6.4.1 CALCIUM PHOSPHATE 181

6.4.1.1∏Better affinity to human body and higher bioresorbability to drive segment 181

TABLE 72 CALCIUM PHOSPHATE MARKET, BY REGION, 2022-2029 (USD MILLION) 181

6.4.2∏ZIRCONIA∏181

6.4.2.1 Bio-inertness and low wear rate to aid market growth 181

TABLE 73 ZIRCONIA MARKET, BY REGION, 2022-2029 (USD MILLION) 182

6.4.3□ALUMINUM OXIDE□182

6.4.3.1∏Increasing use in hip replacements and dental implants to drive segment 182

TABLE 74 ALUMINUM OXIDE MARKET, BY REGION, 2022-2029 (USD MILLION) 183

6.4.4□CALCIUM SULFATE□183

6.4.4.1 Increased popularity and adoption of tissue regeneration products to limit segment growth 183

TABLE 75 CALCIUM SULFATE MARKET, BY REGION, 2022-2029 (USD MILLION) 184

6.4.5 | CARBON | 184

6.4.5.1∏Increasing use in regenerative medicine and cancer treatment to drive segment∏184

TABLE 76 CARBON MARKET, BY REGION, 2022-2029 (USD MILLION) 185

6.4.6 GLASS 185

6.4.6.1∏Rising number of orthopedic and dental procedures to boost segment growth 185

TABLE 77∏GLASS MARKET, BY REGION, 2022-2029 (USD MILLION)∏186

6.5 NATURAL BIOMATERIALS 186

TABLE 78 APPLICATIONS OF NATURAL BIOMATERIALS 186

TABLE 79 BIOMATERIALS MARKET FOR NATURAL BIOMATERIALS, BY TYPE, 2022-2029 (USD MILLION) 187

TABLE 80 BIOMATERIALS MARKET FOR NATURAL BIOMATERIALS, BY REGION, 2022-2029 (USD MILLION) 188

6.5.1 ☐ HYALURONIC ACID ☐ 188

6.5.1.1∏Rising prevalence of osteoarthritis among geriatric population to drive segment∏188

TABLE 81 HYALURONIC ACID MARKET, BY REGION, 2022-2029 (USD MILLION) 189

6.5.2 COLLAGEN 189

6.5.2.1 Biocompatibility, biodegradability, accessibility, and efficient production processes to drive market 189

TABLE 82□COLLAGEN MARKET, BY REGION, 2022-2029 (USD MILLION)□190

6.5.3 | FIBRIN | 190

6.5.3.1 High utilization in wound healing and blood clotting to aid market growth 190

TABLE 83□FIBRIN MARKET, BY REGION, 2022-2029 (USD MILLION)□191

6.5.4□CELLULOSE□191

6.5.4.1 Better biodegradability, water-retention capability, and renewability to propel market growth 191

TABLE 84 CELLULOSE MARKET, BY REGION, 2022-2029 (USD MILLION) 192

6.5.5 CHITIN 192

6.5.5.1∏Increased use in biomedical sector for wound dressings, drug delivery, and bone repair to drive market∏192

TABLE 85 CHITIN MARKET, BY REGION, 2022-2029 (USD MILLION) 193

6.5.6 ALGINATES 193

Scotts International, EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

6.5.6.1 Increased use in gastric reflux treatment to propel market growth 193

TABLE 86 ALGINATES MARKET, BY REGION, 2022-2029 (USD MILLION) 194

6.5.7 | GELATIN | 194

6.5.7.1∏Cost-effectiveness and easy manufacturing process to drive segment growth ☐ 194

TABLE 87 GELATIN MARKET, BY REGION, 2022-2029 (USD MILLION) 195

6.5.8 CHITOSAN 195

6.5.8.1 Non-toxicity, antimicrobial attributes, and functional versatility to aid market growth 195

TABLE 88 CHITOSAN MARKET, BY REGION, 2022-2029 (USD MILLION) 196

6.5.9∏SILK∏196

6.5.9.1□Flexibility, glossiness, and adhesive abilities to boost market growth□196

TABLE 89∏SILK MARKET, BY REGION, 2022-2029 (USD MILLION)∏197

6.5.10 OTHER NATURAL BIOMATERIALS 197

TABLE 90∏OTHER NATURAL BIOMATERIALS MARKET, BY REGION, 2022-2029 (USD MILLION)∏198

7□BIOMATERIALS MARKET, BY APPLICATION□199

7.1□INTRODUCTION□200

TABLE 91□BIOMATERIALS MARKET, BY APPLICATION, 2022-2029 (USD MILLION)□200

7.2∏ORTHOPEDIC∏200

TABLE 92∏BIOMATERIALS MARKET FOR ORTHOPEDIC APPLICATIONS, BY TYPE, 2022-2029 (USD MILLION)∏201

TABLE 93[BIOMATERIALS MARKET FOR ORTHOPEDIC APPLICATIONS, BY REGION, 2022-2029 (USD MILLION)[201

7.2.1 | JOINT REPLACEMENT | 202

TABLE 94 BIOMATERIALS MARKET FOR JOINT REPLACEMENT APPLICATIONS, BY TYPE, 2022-2029 (USD MILLION) 202

TABLE 95 BIOMATERIALS MARKET FOR JOINT REPLACEMENT APPLICATIONS, BY REGION, 2022-2029 (USD MILLION) 203

7.2.1.1 Knee replacement 203

7.2.1.1.1 Growing number of knee replacement procedures to drive market growth 203

TABLE 96∏BIOMATERIALS MARKET FOR KNEE REPLACEMENT APPLICATIONS, BY REGION, 2022-2029 (USD MILLION)∏204

7.2.1.2 Hip replacement 204

7.2.1.2.1 Large number of procedures performed to support market growth 204

TABLE 97∏BIOMATERIALS MARKET FOR HIP REPLACEMENT APPLICATIONS, BY REGION, 2022-2029 (USD MILLION)∏205

7.2.1.3 Shoulder replacement 205

7.2.1.3.1 ☐ Extensive use of biomaterials in shoulder replacement procedures to boost market ☐ 205

TABLE 98[BIOMATERIALS MARKET FOR SHOULDER REPLACEMENT APPLICATIONS, BY REGION, 2022-2029 (USD MILLION)[206

7.2.1.4 Other joint replacement procedures 206

TABLE 99  $\square$ BIOMATERIALS MARKET FOR OTHER JOINT REPLACEMENT PROCEDURES, BY REGION, 2022-2029 (USD MILLION)  $\square$  207

7.2.2 BIORESORBABLE TISSUE FIXATION 207

TABLE 100 BIOMATERIALS MARKET FOR BIORESORBABLE TISSUE FIXATION APPLICATIONS, BY PRODUCT, 2022-2029 (USD MILLION) 208

TABLE 101 BIOMATERIALS MARKET FOR BIORESORBABLE TISSUE FIXATION APPLICATIONS, BY REGION, 2022-2029 (USD MILLION) 208

7.2.2.1 Suture anchors 208

7.2.2.1.1 Growing awareness about suture anchor devices to drive market growth 208

TABLE 102∏BIOMATERIALS MARKET FOR SUTURE ANCHORS, BY REGION, 2022-2029 (USD MILLION)∏209

7.2.2.2 Interference screws 209

7.2.2.2.1 | Increasing awareness about ACL to contribute to market growth | 209

TABLE 103∏BIOMATERIALS MARKET FOR INTERFERENCE SCREWS, BY REGION, 2022-2029 (USD MILLION)∏210

7.2.2.3 Meniscal repair tacks 210

7.2.2.3.1 Rising sports injuries to drive growth 210

TABLE 104∏BIOMATERIALS MARKET FOR MENISCAL REPAIR TACKS, BY REGION, 2022-2029 (USD MILLION)∏210

Scotts International, EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

# 7.2.2.4 Meshes 211

 $7.2.2.4.1 \\ \square We ar resistance, proper shaping, and holding capacity of bioresorbable implants to increase demand for meshes \\ \square 211$ 

TABLE 105∏BIOMATERIALS MARKET FOR MESHES, BY REGION, 2022-2029 (USD MILLION)∏211

7.2.3 SPINE SURGERY 211

TABLE 106∏BIOMATERIALS MARKET FOR SPINE SURGERY APPLICATIONS, BY TYPE, 2022-2029 (USD MILLION)∏212

TABLE 107 BIOMATERIALS MARKET FOR SPINE SURGERY APPLICATIONS, BY REGION, 2022-2029 (USD MILLION) 212

7.2.3.1 Spinal fusion 212

7.2.3.1.1 Introduction of minimally invasive spinal fusion procedures and better clinical outcomes to drive market growth 212

TABLE 108 BIOMATERIALS MARKET FOR SPINAL FUSION APPLICATIONS, BY REGION, 2022-2029 (USD MILLION) 213

7.2.3.2 Minimally invasive fusion □213

7.2.3.2.1 | Faster recovery associated with minimally invasive fusion procedures to drive demand | 213

TABLE 109 BIOMATERIALS MARKET FOR MINIMALLY INVASIVE FUSION APPLICATIONS, BY REGION, 2022-2029 (USD MILLION) 214

7.2.3.3 Motion preservation & dynamic stabilization 214

TABLE 110∏BIOMATERIALS MARKET FOR MOTION PRESERVATION & DYNAMIC STABILIZATION APPLICATIONS, BY PRODUCT,

2022-2029 (USD MILLION) □214

TABLE 111 BIOMATERIALS MARKET FOR MOTION PRESERVATION & DYNAMIC STABILIZATION APPLICATIONS, BY REGION, 2022-2029 (USD MILLION) 215

7.2.3.3.1 Pedicle-based rod systems 215

7.2.3.3.1.1 Rising geriatric population to favor market growth 215

TABLE 112∏BIOMATERIALS MARKET FOR PEDICLE-BASED ROD SYSTEMS, BY REGION, 2022-2029 (USD MILLION)∏216

7.2.3.3.2 Interspinous spacers 216

7.2.3.3.2.1 High prevalence of degenerative spinal conditions to contribute to growth 216

TABLE 113 BIOMATERIALS MARKET FOR INTERSPINOUS SPACERS, BY REGION, 2022-2029 (USD MILLION) 217

7.2.3.3.3 Artificial discs 217

7.2.3.3.3.1 High biocompatibility to increase use of artificial discs 217

TABLE 114∏BIOMATERIALS MARKET FOR ARTIFICIAL DISCS, BY REGION, 2022-2029 (USD MILLION)∏218

7.2.4 ☐ FRACTURE FIXATION ☐ 218

TABLE 115∏BIOMATERIALS MARKET FOR FRACTURE FIXATION APPLICATIONS, BY PRODUCT, 2022-2029 (USD MILLION)∏218

TABLE 116 BIOMATERIALS MARKET FOR FRACTURE FIXATION APPLICATIONS, BY REGION, 2022-2029 (USD MILLION) 219

7.2.4.1 Bone plates 219

7.2.4.1.1 Growing use of biomaterials in bone plates to aid growth 219

TABLE 117 BIOMATERIALS MARKET FOR BONE PLATES, BY REGION, 2022-2029 (USD MILLION) 219

7.2.4.2∏Screws∏220

7.2.4.2.1 Extensive use of screws in orthopedic procedures to boost market 220

TABLE 118∏BIOMATERIALS MARKET FOR SCREWS, BY REGION, 2022-2029 (USD MILLION)∏220

7.2.4.3 Pins 220

7.2.4.3.1 Growing use of metallic biomaterials in pins to propel growth 220

TABLE 119∏BIOMATERIALS MARKET FOR PINS, BY REGION, 2022-2029 (USD MILLION)∏221

7.2.4.4 Rods 221

7.2.4.4.1 Growing preference for rods for fracture treatment to fuel growth 221

TABLE 120 BIOMATERIALS MARKET FOR RODS, BY REGION, 2022-2029 (USD MILLION) 221

7.2.4.5 Wires 222

7.2.4.5.1 Extensive use of wires to treat fractures of small bones to aid growth 222

TABLE 121∏BIOMATERIALS MARKET FOR WIRES, BY REGION, 2022-2029 (USD MILLION)∏222

7.2.5 ORTHOBIOLOGICS 222

7.2.5.1 Rising cases of osteoarthritis to drive growth 222

TABLE 122∏BIOMATERIALS MARKET FOR ORTHOBIOLOGICS APPLICATIONS, BY REGION, 2022-2029 (USD MILLION)∏223

Scotts International, EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

# 7.3 CARDIOVASCULAR 223

TABLE 123 BIOMATERIALS MARKET FOR CARDIOVASCULAR APPLICATIONS, BY PRODUCT, 2022-2029 (USD MILLION) 224 TABLE 124 BIOMATERIALS MARKET FOR CARDIOVASCULAR APPLICATIONS, BY REGION, 2022-2029 (USD MILLION) 224 7.3.1 CATHETERS 225

7.3.1.1 Shift in patient preference from traditional open surgeries to minimally invasive surgeries to drive market 225 TABLE 125 BIOMATERIALS MARKET FOR CATHETERS, BY REGION, 2022-2029 (USD MILLION) 25

7.3.2 STENTS 225

7.3.2.1 Increasing number of coronary intervention procedures to boost demand for implantable stents 225

TABLE 126 BIOMATERIALS MARKET FOR STENTS, BY REGION, 2022-2029 (USD MILLION) 226

7.3.3∏IMPLANTABLE CARDIAC DEFIBRILLATORS∏226

7.3.3.1 Growing geriatric population to increase demand for implantable cardiac defibrillators 226

TABLE 127 BIOMATERIALS MARKET FOR IMPLANTABLE CARDIAC DEFIBRILLATORS, BY REGION, 2022-2029 (USD MILLION) 227 7.3.4 PACEMAKERS 227

7.3.4.1 High prevalence of bradycardia to drive demand for pacemakers 227

TABLE 128 BIOMATERIALS MARKET FOR PACEMAKERS, BY REGION, 2022-2029 (USD MILLION) 228

7.3.5 SENSORS 228

7.3.5.1 □Increasing prevalence of cardiac disorders to boost demand for cardiovascular sensors □228

TABLE 129 BIOMATERIALS MARKET FOR SENSORS, BY REGION, 2022-2029 (USD MILLION) 228

7.3.6 HEART VALVES 229

7.3.6.1 Growing geriatric population to increase demand for prosthetic valves 229

TABLE 130 BIOMATERIALS USED FOR DIFFERENT VALVE COMPONENTS 229

TABLE 131 BIOMATERIALS MARKET FOR HEART VALVES, BY REGION, 2022-2029 (USD MILLION) 230

7.3.7 VASCULAR GRAFTS 230

7.3.7.1 Growing number of research studies to open opportunities for growth 230

TABLE 132∏BIOMATERIALS MARKET FOR VASCULAR GRAFTS, BY REGION, 2022-2029 (USD MILLION)∏231

7.3.8 GUIDEWIRES 231

7.3.8.1 ☐ Extensive use of guidewires for guiding catheters and placing stents to boost market ☐ 231

TABLE 133 BIOMATERIALS MARKET FOR GUIDEWIRES, BY REGION, 2022-2029 (USD MILLION) 232

7.3.9 OTHER CARDIOVASCULAR PRODUCTS 232

TABLE 134 BIOMATERIALS MARKET FOR OTHER CARDIOVASCULAR PRODUCTS, BY REGION, 2022-2029 (USD MILLION) 233 7.4 OPHTHALMOLOGY 233

TABLE 135  $\square$ BIOMATERIALS MARKET FOR OPHTHALMOLOGY APPLICATIONS, BY PRODUCT, 2022-2029 (USD MILLION)  $\square$ 233

TABLE 136 BIOMATERIALS MARKET FOR OPHTHALMOLOGY APPLICATIONS, BY REGION, 2022-2029 (USD MILLION) 234

7.4.1 CONTACT LENSES 234

7.4.1.1 High cases of refractive errors and preference for contact lenses over spectacles to drive market 234

TABLE 137  $\square$ BIOMATERIALS MARKET FOR CONTACT LENSES, BY REGION, 2022-2029 (USD MILLION)  $\square$ 235

7.4.2 INTRAOCULAR LENSES 235

7.4.2.1 Increasing prevalence of cataracts to drive number of cataract surgeries performed 235

TABLE 138 | BIOMATERIALS MARKET FOR INTRAOCULAR LENSES, BY REGION, 2022-2029 (USD MILLION) | | 236

7.4.3 FUNCTIONAL REPLACEMENT OF OCULAR TISSUE 236

7.4.3.1 Increasing funding and research activities for development of bionic eyes to drive market 236

TABLE 139 BIOMATERIALS MARKET FOR FUNCTIONAL REPLACEMENT OF OCULAR TISSUE, BY REGION, 2022-2029 (USD MILLION) 237

7.4.4 SYNTHETIC CORNEAS 237

7.4.4.1 Growing number of corneal blindness cases worldwide to boost demand for synthetic collagen biomaterials 237

TABLE 140 BIOMATERIALS MARKET FOR SYNTHETIC CORNEAS, BY REGION, 2022-2029 (USD MILLION) 238

7.4.5 OTHER OPHTHALMOLOGY PRODUCTS 238

Scotts International, EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

TABLE 141 BIOMATERIALS MARKET FOR OTHER OPHTHALMOLOGY PRODUCTS, BY REGION, 2022-2029 (USD MILLION) 238 7.5 DENTAL 239

TABLE 142 BIOMATERIALS MARKET FOR DENTAL APPLICATIONS, BY PRODUCT, 2022-2029 (USD MILLION) 239 TABLE 143 BIOMATERIALS MARKET FOR DENTAL APPLICATIONS, BY REGION, 2022-2029 (USD MILLION) 239 7.5.1 DENTAL IMPLANTS 240

 $7.5.1.1 \\ \square Increasing \ awareness \ of \ dental \ services \ and \ improving \ quality \ of \ dental \ products \ to \ boost \ growth \\ \square 240 \\ \square 2$ 

TABLE 144 $\square$ PERCENTAGE OF INDIVIDUALS WITH UNTREATED DENTAL CARIES IN US (2016) $\square$ 240

TABLE 145 BIOMATERIALS MARKET FOR DENTAL IMPLANTS, BY REGION, 2022-2029 (USD MILLION) 241

7.5.2 DENTAL BONE GRAFTS & SUBSTITUTES 241

7.5.2.1 Growing demand for dental implants among people opting for cosmetic dentistry to drive market growth 241 TABLE 146 BIOMATERIALS MARKET FOR DENTAL BONE GRAFTS & SUBSTITUTES, BY REGION, 2022-2029 (USD MILLION) 242 7.5.3 DENTAL MEMBRANES 242

7.5.3.1∏Growing use of dental membranes in oral and periodontal surgery to favor market growth ☐242

TABLE 147 BIOMATERIALS MARKET FOR DENTAL MEMBRANES, BY REGION, 2022-2029 (USD MILLION) 243

7.5.4 TISSUE REGENERATION MATERIALS 243

7.5.4.1 Increasing prevalence of periodontal disease to support growth 243

TABLE 148 BIOMATERIALS MARKET FOR TISSUE REGENERATION MATERIALS, BY REGION, 2022-2029 (USD MILLION) 244 7.6 PLASTIC SURGERY 244

TABLE 149 BIOMATERIALS MARKET FOR PLASTIC SURGERY APPLICATIONS, BY PRODUCT, 2022-2029 (USD MILLION) 244 TABLE 150 BIOMATERIALS MARKET FOR PLASTIC SURGERY APPLICATIONS, BY REGION, 2022-2029 (USD MILLION) 245 7.6.1 SOFT TISSUE FILLERS 245

7.6.1.1 Advantages such as long-lasting capacity and less allergic reactions to drive demand for soft tissue fillers 151 BIOMATERIALS MARKET FOR SOFT TISSUE FILLERS, BY REGION, 2022-2029 (USD MILLION) 246
7.6.2 CRANIOFACIAL SURGERY PRODUCTS 246

7.6.2.1 Increasing incidence of trauma cases and head & neck cancer to increase number of craniofacial surgeries 246 TABLE 152 BIOMATERIALS MARKET FOR CRANIOFACIAL SURGERY PRODUCTS, BY REGION, 2022-2029 (USD MILLION) 247 7.6.3 FACIAL WRINKLE TREATMENT DEVICES 247

7.6.3.1 ☐Increase in demand for non-surgical treatments to drive market growth ☐247

TABLE 153[BIOMATERIALS MARKET FOR FACIAL WRINKLE TREATMENT DEVICES, BY REGION, 2022-2029 (USD MILLION)[248 7.6.4]BIOENGINEERED SKINS[248

7.6.4.1 Growing applications of bioengineered skins to boost market 248

TABLE 154\[BIOMATERIALS MARKET FOR BIOENGINEERED SKINS, BY REGION, 2022-2029 (USD MILLION)\[248 7.6.5\[Peripheral Nerve Repair Devices\[249]

7.6.5.1 Increasing incidence of trauma cases to support growth 249

TABLE 155
BIOMATERIALS MARKET FOR PERIPHERAL NERVE REPAIR DEVICES, BY REGION, 2022-2029 (USD MILLION)
249
7.6.6
ACELLULAR DERMAL MATRICES
249

7.6.6.1 Ability of ADMs to provide mechanical support to boost demand 249

TABLE 156[BIOMATERIALS MARKET FOR ACELLULAR DERMAL MATRICES, BY REGION, 2022-2029 (USD MILLION)[250 7.7]WOUND HEALING[251

TABLE 157 BIOMATERIALS MARKET FOR WOUND HEALING APPLICATIONS, BY PRODUCT, 2022-2029 (USD MILLION) 1251 TABLE 158 BIOMATERIALS MARKET FOR WOUND HEALING APPLICATIONS, BY REGION, 2022-2029 (USD MILLION) 251 7.7.1 WOUND CLOSURE DEVICES 252

TABLE 159 $\square$ BIOMATERIALS MARKET FOR WOUND CLOSURE DEVICES, BY TYPE, 2022-2029 (USD MILLION) $\square$ 252 TABLE 160 $\square$ BIOMATERIALS MARKET FOR WOUND CLOSURE DEVICES, BY REGION, 2022-2029 (USD MILLION) $\square$ 252 7.7.1.1 $\square$ Sutures $\square$ 253

7.7.1.1.1 Ability to use sutures as advanced biologically active components to drive demand 253
TABLE 161 BIOMATERIALS MARKET FOR WOUND CLOSURE SUTURES, BY REGION, 2022-2029 (USD MILLION) 253

Scotts International, EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com www.scotts-international.com

# 7.7.1.2 Staples 254

7.7.1.2.1 ☐ Ability of staples to shorten closure by 70-80% compared to sutures to drive adoption ☐ 254

TABLE 162∏BIOMATERIALS MARKET FOR WOUND CLOSURE STAPLES, BY REGION, 2022-2029 (USD MILLION)∏254

7.7.2 SURGICAL HEMOSTATS 254

7.7.2.1 Ability of surgical hemostats to control bleeding and reduce need for frequent blood transfusions to boost market 254

TABLE 163[BIOMATERIALS MARKET FOR SURGICAL HEMOSTATS, BY REGION, 2022-2029 (USD MILLION)[255]

7.7.3 INTERNAL TISSUE SEALANTS 255

7.7.3.1 Ability of internal tissue sealants to control bleeding and hemorrhages to fuel growth 255

TABLE 164 BIOMATERIALS MARKET FOR INTERNAL TISSUE SEALANTS, BY REGION, 2022-2029 (USD MILLION) 255

7.7.4 □ ADHESION BARRIERS □ 256

7.7.4.1∏Ability of adhesion barriers to promote inflammatory healing process to propel growth ☐256

TABLE 165∏BIOMATERIALS MARKET FOR ADHESION BARRIERS, BY REGION, 2022-2029 (USD MILLION)∏256

7.7.5 ☐ HERNIA MESHES ☐ 256

7.7.5.1 Growing use of meshes in hernia repair to boost market 256

TABLE 166∏BIOMATERIALS MARKET FOR HERNIA MESHES, BY REGION, 2022-2029 (USD MILLION)∏257

7.7.6 SKIN SUBSTITUTES 257

7.7.6.1 Diverse range of combinations of skin substitutes to boost demand 257

TABLE 167 BIOMATERIALS MARKET FOR SKIN SUBSTITUTES, BY REGION, 2022-2029 (USD MILLION) 258

7.8 TISSUE ENGINEERING 258

TABLE 168 BIOMATERIALS MARKET FOR TISSUE ENGINEERING APPLICATIONS, BY PRODUCT, 2022-2029 (USD MILLION) 259

TABLE 169 BIOMATERIALS MARKET FOR TISSUE ENGINEERING APPLICATIONS, BY REGION, 2022-2029 (USD MILLION) 259

 $7.8.1 \square SCAFFOLDS \square 259$ 

7.8.1.1 Rise in organ transplantation procedures to drive market 259

TABLE 170 BIOMATERIALS MARKET FOR SCAFFOLDS, BY REGION, 2022-2029 (USD MILLION) 260

7.8.2 NANOMATERIALS 260

7.8.2.1 Rising research on nanotechnology to drive growth 260

TABLE 171∏BIOMATERIALS MARKET FOR NANOMATERIALS, BY REGION, 2022-2029 (USD MILLION)∏261

7.8.3 INORGANIC NANOPARTICLES 261

7.8.3.1 Growing demand for nanotechnological medical products to propel market 261

TABLE 172 BIOMATERIALS MARKET FOR INORGANIC NANOPARTICLES, BY REGION, 2022-2029 (USD MILLION) 261

7.9 NEUROLOGICAL/CENTRAL NERVOUS SYSTEM 262

TABLE 173 BIOMATERIALS MARKET FOR NEUROLOGICAL/CENTRAL NERVOUS SYSTEM APPLICATIONS, BY PRODUCT, 2022-2029 (USD MILLION) 1262

TABLE 174[BIOMATERIALS MARKET FOR NEUROLOGICAL/CENTRAL NERVOUS SYSTEM APPLICATIONS, BY REGION, 2022-2029 (USD MILLION)[262]

7.9.1 SHUNTING SYSTEMS 263

7.9.1.1□Rising cases of hydrocephalus to boost market growth □263

TABLE 175 BIOMATERIALS MARKET FOR SHUNTING SYSTEMS, BY REGION, 2022-2029 (USD MILLION) 263

7.9.2 CORTICAL NEURAL PROSTHETICS 264

7.9.2.1 Growing use of CNPs to treat paralyzed patients to drive growth 264

TABLE 176∏BIOMATERIALS MARKET FOR CORTICAL NEURAL PROSTHETICS, BY REGION, 2022-2029 (USD MILLION)∏264

7.9.3 HYDROGEL SCAFFOLDS 264

7.9.3.1 Increasing incidence of spinal cord surgeries to drive demand for hydrogel scaffolds 264

TABLE 177 BIOMATERIALS MARKET FOR HYDROGEL SCAFFOLDS, BY REGION, 2022-2029 (USD MILLION) 265

7.9.4 NEURAL STEM CELL ENCAPSULATION PRODUCTS 265

7.9.4.1 Lack of substitutes for treatment of neurotrauma to boost market growth 265

TABLE 178 BIOMATERIALS MARKET FOR NEURAL STEM CELL ENCAPSULATION PRODUCTS, BY REGION, 2022-2029 (USD

Scotts International, EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

# MILLION) □266

7.10 URINARY 266

TABLE 179 BIOMATERIALS MARKET FOR URINARY APPLICATIONS, BY PRODUCT, 2022-2029 (USD MILLION) 267 TABLE 180 BIOMATERIALS MARKET FOR URINARY APPLICATIONS, BY REGION, 2022-2029 (USD MILLION) 267 7.10.1 URINARY CATHETERS 267

 $7.10.1.1 \verb|| Development of novel coatings for urinary catheters to boost market \verb||| 267$ 

TABLE 181 $\square$ BIOMATERIALS MARKET FOR URINARY CATHETERS, BY REGION, 2022-2029 (USD MILLION) $\square$ 268 7.10.2 $\square$ URETHRAL STENTS $\square$ 268

7.10.2.1 Complications associated with urethral stents to limit market growth 268

TABLE 182[BIOMATERIALS MARKET FOR URETHRAL STENTS, BY REGION, 2022-2029 (USD MILLION)[269 7.10.3]OTHER URINARY PRODUCTS[269]

TABLE 183 BIOMATERIALS MARKET FOR OTHER URINARY PRODUCTS, BY REGION, 2022-2029 (USD MILLION) 269



To place an Order with Scotts International:

Complete the relevant blank fields and sign

☐ - Print this form

# Biomaterials Market by Type (Metallic (Gold, Magnesium), Ceramic (Aluminum Oxide, Carbon), Polymer (Polyethylene, Polyester), Natural (Hyaluronic acid, Collagen, Gelatin)), Application (Orthopedic, Dental, CVD, Ophthalmology) - Global Forecast to 2029

Market Report | 2024-03-07 | 664 pages | MarketsandMarkets

ORDER FORM:		
elect license	License	Price
	Single User	\$4950.00
	Multi User	\$6650.00
	Corporate License	\$8150.00
	Enterprise Site License	\$10000.00
	VAT	
	Total	
ease circle the relev	ant license option. For any questions please contact support@scotts-international.com or 0048 603 39	94 346.
* VAT will be added a	at 23% for Polish based companies, individuals and EU based companies who are unable to provide a	
* VAT will be added a	at 23% for Polish based companies, individuals and EU based companies who are unable to provide a	
* VAT will be added a mail* rst Name*	at 23% for Polish based companies, individuals and EU based companies who are unable to provide a	
* VAT will be added a	at 23% for Polish based companies, individuals and EU based companies who are unable to provide a	

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com www.scotts-international.com

Zip Code*	Country*	
	Date	2025-05-07
	Signature	