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Bioactive Glasses Market Forecasts to 2032 – Global Analysis By Type (Silicate-Based Bioactive Glasses, Borate-Based Bioactive Glasses, Phosphate-Based Bioactive Glasses, and Other Types), Form, Technology, Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Bioactive Glasses Market is accounted for $1.3 billion in 2025 and is expected to reach $2.0 billion by 2032 growing at a CAGR of 6.4% during the forecast period. Bioactive glasses are specialized biomaterials composed of silica, calcium oxide, sodium oxide, and phosphorous pentoxide that bond with living tissues. When implanted, they release ions that stimulate cellular activity, promote bone regeneration, and form a hydroxycarbonate apatite layer similar to natural bone mineral. They are widely used in dentistry, orthopedics, and wound healing. Their biocompatibility, antimicrobial properties, and ability to integrate with biological systems distinguish them from inert implant materials, making them valuable in regenerative medicine applications.

According to the FDA, bioactive glass scaffolds are approved for use in bone graft substitutes, as they actively bond with living tissue and stimulate natural bone regeneration.

Market Dynamics:

Driver:

Growing aging population globally

The global rise in the aging population is fueling demand for bioactive glasses,

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particularly in dental, orthopedic, and bone regeneration applications. Elderly individuals face higher incidences of osteoporosis, fractures, and tooth loss, spurring adoption of advanced biomaterials for tissue repair and implants. Bioactive glasses, with their excellent bioactivity and compatibility, are gaining traction as substitutes for traditional grafts. This demographic shift ensures sustained market growth, as healthcare systems worldwide increasingly turn to innovative biomaterials for elderly patient care.

Restraint:

High cost of bioactive glass products

Despite strong therapeutic potential, the market faces a significant restraint due to the high cost of bioactive glass products. Complex manufacturing processes, expensive raw materials, and stringent regulatory requirements elevate production expenses. These costs limit accessibility in price-sensitive markets, hindering widespread adoption in developing economies. Additionally, healthcare providers may hesitate to recommend premium biomaterials when cheaper alternatives exist. Without cost-effective manufacturing advancements and scalable production techniques, the high pricing barrier could significantly restrict broader market penetration across global healthcare ecosystems.

Opportunity:

Development of innovative product forms

The development of novel product forms such as coatings, granules, and injectable powders offers a compelling growth opportunity for bioactive glasses. These innovations enhance clinical versatility, allowing tailored applications in dentistry, wound healing, and orthopedics. Research into nano-structured bioactive glasses and hybrid composites is expanding therapeutic possibilities. Furthermore, collaborations between academic institutions and medical device companies accelerate product commercialization. By broadening usability and improving outcomes, innovative product formats are set to attract wider adoption across both advanced and emerging healthcare markets.

Threat:

Limited reimbursement policies in healthcare

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The lack of favorable reimbursement frameworks poses a critical threat to the adoption of bioactive glass technologies. Many healthcare systems categorize bioactive glasses as non-essential or premium therapies, resulting in out-of-pocket costs for patients. This financial burden restricts market penetration, particularly in low%- %and middle-income regions. Moreover, limited insurance coverage discourages hospitals and clinics from adopting these advanced biomaterials at scale. Unless reimbursement policies expand to include bioactive solutions, growth prospects may be curtailed despite their clinical effectiveness.

Covid-19 Impact:

The COVID-19 pandemic disrupted supply chains and delayed elective medical procedures, negatively impacting demand for bioactive glasses in dentistry and orthopedics. Many healthcare systems prioritized critical care, postponing non-urgent surgeries and implant treatments. However, the pandemic also accelerated innovation in regenerative medicine and biomaterials research, opening new opportunities for bioactive solutions. As elective procedures resume, pent-up demand is expected to fuel recovery. Overall, while COVID-19 created short-term challenges, it reinforced the long-term relevance of bioactive glasses in advanced healthcare.

The silicate-based bioactive glasses segment is expected to be the largest during the forecast period

The silicate-based bioactive glasses segment is expected to dominate the market due to its well-established clinical performance and broad therapeutic applications. These materials exhibit superior bioactivity, promoting effective bonding with bone and dental tissues. Extensive research backing, availability of commercialized products, and successful use in implants and coatings strengthen this segment’s leadership. Moreover, favorable mechanical properties and ease of fabrication make silicate-based glasses a preferred choice in biomedical engineering. As demand for proven and reliable biomaterials rises, this segment secures its market dominance.

The powders segment is expected to have the highest CAGR during the forecast period

The powders segment is anticipated to witness the highest CAGR during the forecast period, reinforced by its growing use in minimally invasive procedures and tissue engineering applications. Powdered bioactive glasses are versatile, offering enhanced surface area for cellular interaction and faster healing outcomes. Their adaptability in

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injectable forms and incorporation into scaffolds boosts appeal in regenerative medicine. Advancements in nanotechnology further enhance efficacy and product innovation. With rising clinical demand for flexible and effective biomaterials, the powders segment is poised for rapid growth.

Region with largest share:

Asia Pacific is expected to command the largest market share, ascribed to its expanding healthcare infrastructure, rising medical tourism, and growing geriatric population. Countries such as China, India, and Japan are witnessing increased demand for advanced biomaterials in dentistry and orthopedics. Government initiatives supporting healthcare modernization and rising disposable incomes further accelerate adoption. Additionally, strong R&D presence and local manufacturing capacities strengthen the region's position. Collectively, these factors ensure Asia Pacific's dominance as the leading revenue-generating region for bioactive glasses.

Region with highest CAGR:

North America is projected to record the highest CAGR, associated with strong technological innovation and robust adoption of advanced biomaterials. The region benefits from well-established healthcare infrastructure, extensive clinical research, and early regulatory approvals. High prevalence of bone-related conditions and dental disorders fuels demand for bioactive glasses in both hospitals and specialty clinics. Additionally, strategic collaborations between universities, startups, and medical device companies accelerate innovation. With strong patient awareness and healthcare spending, North America emerges as the fastest-growing regional market.

Key players in the market

Some of the key players in Bioactive Glasses Market include SCHOTT AG, Mo-Sci Corporation, Noraker, Vitryxx AG, NovaBone Products LLC, Stryker Corporation, BonAlive Biomaterials Ltd, Zimmer Biomet Holdings Inc., Corning Incorporated, Sinanen Zeomic Co. Ltd., Arthrex Inc., DePuy Synthes (Johnson & Johnson), Biomet 3i LLC, Dentsply Sirona Inc., Mitsubishi Chemical Corporation, and Matexcel.

Key Developments:

In Sep 2025, SCHOTT AG introduced bioactive glass granules with a customized strontium and zinc ion release profile, designed to significantly enhance osteoblast

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activity and accelerate bone regeneration in spinal fusion procedures.

In Aug 2025, Mo-Sci Corporation launched its PerioGlas® Shield, a new injectable putty for periodontal bone defects that provides a physical barrier and sustained release of silicate ions to promote periodontal ligament attachment and alveolar bone repair.

In July 2025, Stryker Corporation announced the launch of NovaBone® Dental Putty with Silver, a first-to-market formulation that combines the osteoconductive properties of bioactive glass with the antimicrobial efficacy of silver ions for infected dental extraction sites.

Types Covered:

- Silicate-Based Bioactive Glasses
- Borate-Based Bioactive Glasses
- Phosphate-Based Bioactive Glasses
- Other Types

Forms Covered:

- Powders
- Fibers
- Granules

Technologies Covered:

- Melt Quenching
- Sol-Gel Process
- Flame Synthesis

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- Other Technologies

Applications Covered:

- Bone Regeneration
- Dental Care
- Orthopedic Implants & Coatings
- Wound Healing
- Drug Delivery

End Users Covered:

- Hospitals & Clinics
- Dental Clinics
- Research Institutes
- Medical Device Manufacturers

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe

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- Germany
- UK
- Italy
- France
- Spain
- Rest of Europe

Asia Pacific

- Japan
- China
- India
- Australia
- New Zealand
- South Korea
- Rest of Asia Pacific

South America

- Argentina
- Brazil
- Chile
- Rest of South America

Middle East & Africa

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Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as

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per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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