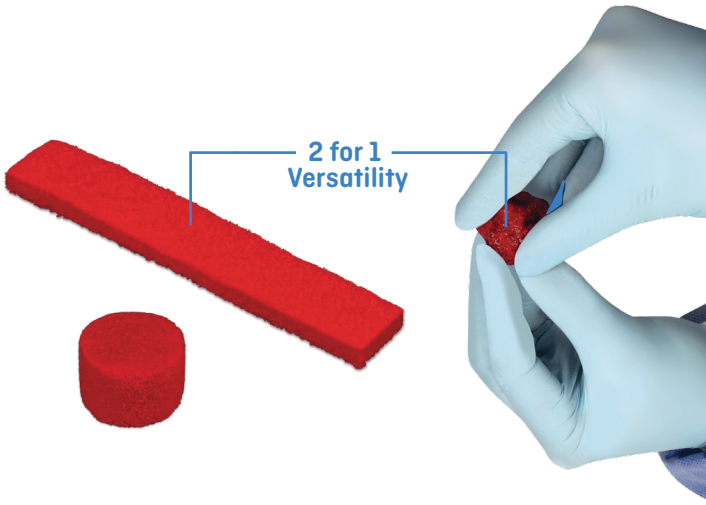
BiFORM®
Bioactive Moldable Matrix

A Robust, Bioactive Bone Graft with Versatility and Moldability

BiFORM® Bioactive Moldable Matrix is composed of carbonate apatite anorganic bone mineral, bioactive glass, and Type I collagen that can be molded to fit the bone defect. It is an osteoconductive, bioactive, porous implant that allows for bony ingrowth across the graft site. The bone graft matrix is slowly resorbed and replaced by new bone tissue during the natural healing process.

Moldable Advantage

- **2 for 1 versatility—**Upon hydration, the strip conformation can be used in its original shape or optionally molded into alternative shapes to address the unique contours of each defect
- Combined with either autogenous bone marrow or autograft with saline
- Can also be used with autograft as a bone graft extender
- Puck conformation option is ideal for molding
- Moldable, flexible, absorbent, resists migration upon irrigation
- A lengthy 40cc size option unlike any other bioactive moldable bone graft

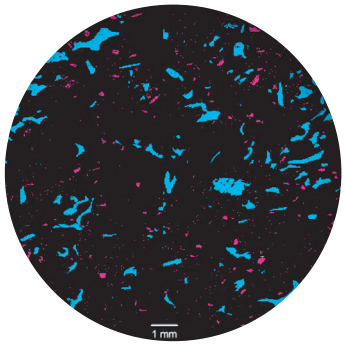


BiFORM® Bioactive Glass Component

- **30% is Optimal:**
  Less is more. Bioactive glass is incorporated into BiFORM® within a suggested critical range of 5-40% for optimal osteoblast growth and calcium phosphate formation in a composite[2]

- **Ideal Particle Range:**
  A narrow particle size distribution limited to 100-300µm to provide a more controlled rate of ion dissolution & surface reactivity, and a more consistent rate of bone bonding & proliferation[3,4]

- **Exemplary Particle Size (100-300µm):**
  Larger sized particles may not fully resorb. Smaller particles may resorb away quickly and impede the upregulation of osteoprogenitor cells.[4,5]



Uniform Particle Distribution

An SEM/EDX Analysis of BiFORM® Bioactive Moldable Matrix polished cross sections showing mineral and bioactive glass

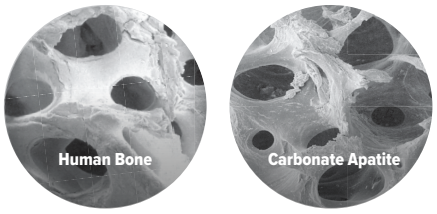
45S5 Bioactive Glass Particles

Carbonate Apatite Anorganic Bone Mineral

Porous Type I Collagen Matrix

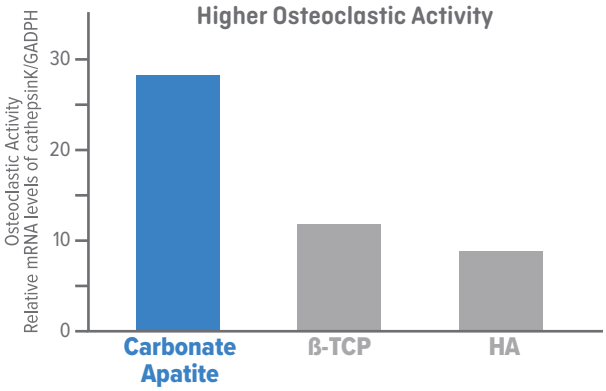
Natural Mineral Structure Similar to Human Bone Mineral

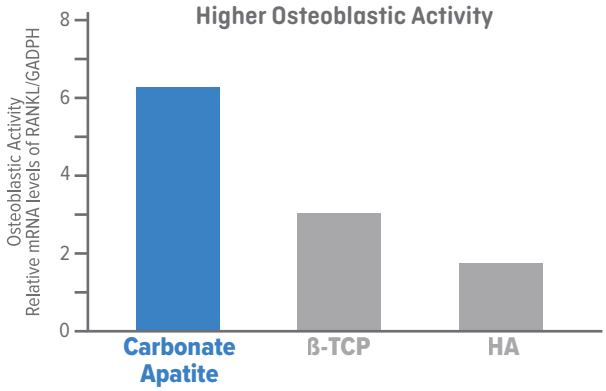
- Pores provide pathways for cell migration and attachment to lay down new bone
- Carbonate apatite is a better osteoconductive material than HA[6]



Similiar Sized Macro & Micro Pores for Cell Migration

Independent Studies have shown higher Osteoclastic & Osteoblastic Activity than ß-TCP & HA[7]





Why BiFORM® Bioactive Moldable Matrix?

- **A Perfect Trio of Components:** 50% Carbonate Apatite anorganic bone mineral, 30% 45S5 Bioactive Glass, 20% Type I Collagen
- **Uniform distribution** of bioactive glass and mineral particles throughout the matrix, achieved through our proprietary manufacturing process[1]
- **Versatile Handling:** can be used in strip form, or molded into conformable putty to pack in defect.

Almost 2x more absorbent than Vitoss® Bioactive Foam[1]

- Delivers stem cell rich BMA to fusion site

	Absorbency (ml/g)
BiFORM® Bioactive Moldable	4.59 ± 0.76
Vitoss® Bioactive Foam	2.70 ± 0.35

BiFORM® Bioactive Moldable Matrix *Molded volume

Product #	Length	Width	Thickness	**Size**
BFBA-0250	-	-	-	2.5 cc*, 1 Puck
BFBA-0500	-	-	-	5.0 cc*, 1 Puck
BFBA-1000	6.25 cm	2 cm	0.8 cm	10 cc, 1 Strip
BFBA-2000	12.5 cm	2 cm	0.8 cm	20 cc, 1 Strip
BFBA-4000	25 cm	2 cm	0.4 cm	40 cc, 1 Strip

For more information or to place an order,

call 800.205.7719

1. Data on file at Collagen Matrix, Inc. **2.** Gerhardt, L., Boccaccini, A.R. (2010). Bioactive Glass-Ceramic Scaffolds for Bone Tissue Engineering. Materials, 3, 3867-3910. Retrieved from https://doi.org/10.3390/ma3073867 **3.** Oonishi, H., Kushitani, S., Yasukawa, E., Iwaki, H., Hench, L.L., Wilson, J., Tsuji, E., Sugihara, T. (1997). Particulate Bioglass Compared With Hydroxyapatite as a Bone Graft Substitute. Clinical Orthopaedics and Related Research, 334, 316-325, Lippincott-Raven Publishers, Philadelphia, PA. **4.** Schepers, E.J.G., Ducheyne, P. (1997). Bioactive glass particles of narrow size range for the treatment of oral bone defects: a 1-24 month experiment with several materials and particle sizes and size ranges. Journal of Oral Rehabilitation, 24, 171-181. **5.** Lindfors, N. C., Koski, I., Heikkilä, J. T., Mattila, K. and Aho, A. J. (2010), A prospective randomized 14-year follow-up study of bioactive glass and autogenous bone as bone graft substitutes in benign bone tumors. J. Biomed. Mater. Res., 94B, 157-164. doi:10.1002/jbm.b.31636 **6.** Spence, G., Patel, N., Brooks, R., Rushton, N. (in press). Carbonate substituted hydroxyapatite: Resorption by osteoclasts modifies the osteoblastic response. Wiley InterScience. Retrieved from https://doi.org/10.1002/jbm.a.32083 **7.** Kanayama, K., Sriarj, W., Shimokawa, H., Ohya, K., Doi, Y., Shibutani, T. 2011. Osteoclast and Osteblast Activities on Carbonate Apatite Plates in Cell Cultures. J. Biomaterials, 26, 435-436.