

# BoneSync™ BioActive

Moldable Strips and Putty



Arthrex® 

**BONESYNC**  
*BIOACTIVE*

# BoneSync™ BioActive Putty and Strips

## Mechanism of Action

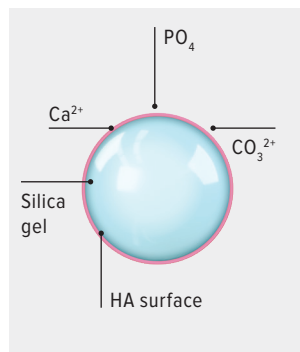
BoneSync BioActive is a second-generation bone void filler that includes bioglass 45S5 and provides an osteoconductive and osteostimulative matrix.<sup>1</sup> Available putty and strip versions to fit various application needs.

- Bioactive glass provides a favorable environment for bone regeneration and osteoblast attachment.<sup>2</sup>
- As bioactive glass interacts with bodily fluids, the dissolution product results in a negatively charged surface and alkaline environment, which is ideal for bone formation.
- Ions adhere to the silica gel surface, forming an apatite mineral layer.
- Mesenchymal stem cells and osteoprogenitor cells attach to the surface of the mineral layer of the bioglass.

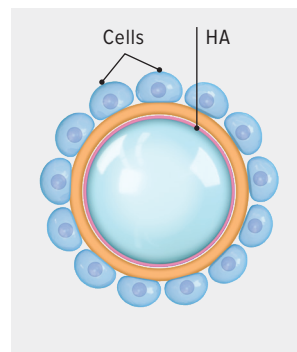
## Bioactive Glass Surface Reaction



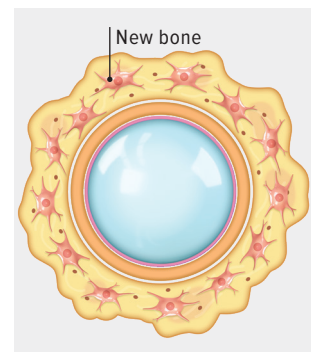
45S5 bioactive glass



Adhesion of  $\text{Ca}^{2+}$ ,  $\text{PO}_4$ , and  $\text{CO}_3^{2+}$  ions to the silica gel surface, forming bone-like hydroxyapatite (HA)



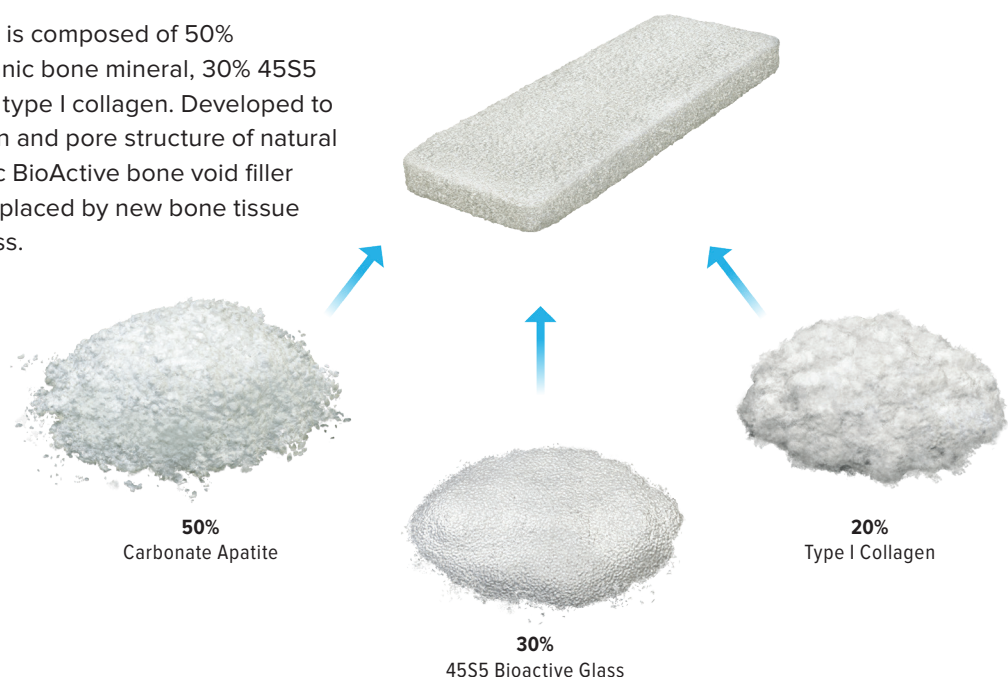
Bone-forming cells colonize the surface of the HA-coated bioactive glass



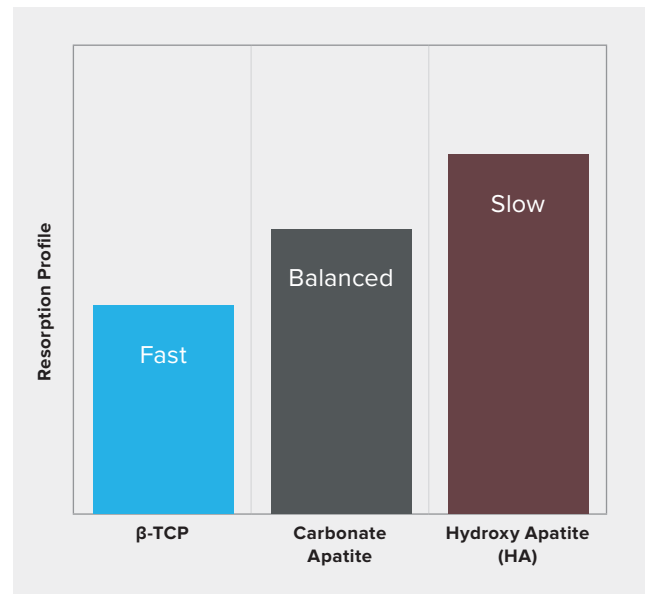
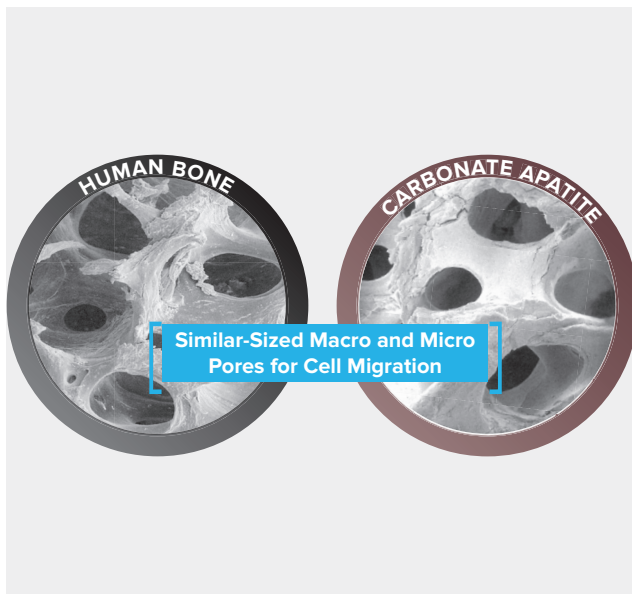
Crystallization of the bone-like matrix and maturation of bone cells lead to new bone formation

## Composition

BoneSync BioActive filler is composed of 50% carbonate apatite anorganic bone mineral, 30% 45S5 bioactive glass, and 20% type I collagen. Developed to resemble the composition and pore structure of natural human bone,<sup>3,4</sup> BoneSync BioActive bone void filler is slowly resorbed and replaced by new bone tissue during the healing process.

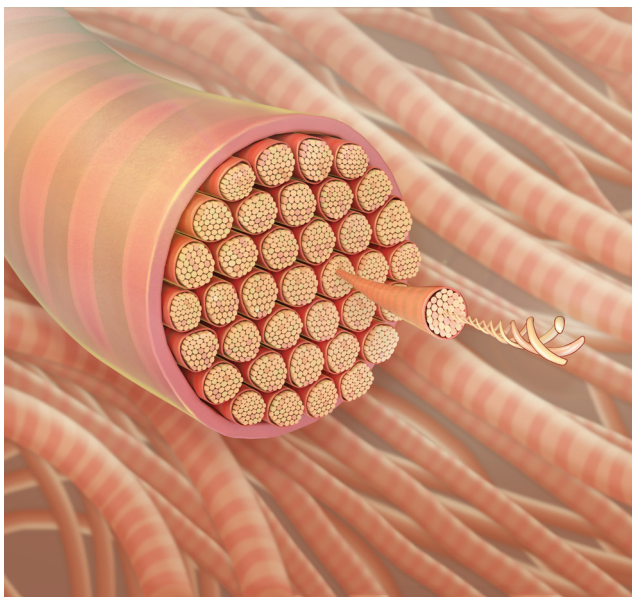


## Features and Benefits



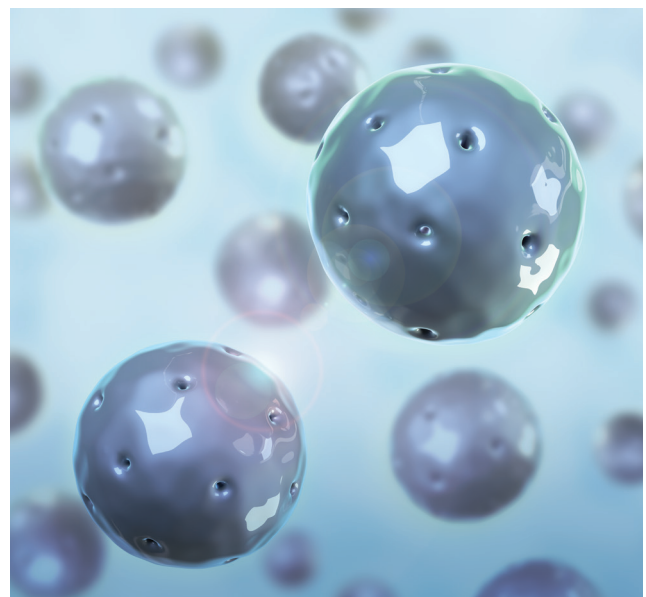
### Carbonate Apatite

An inorganic bone mineral that allows for sustained osteoconductivity and remodeling during bone regeneration, carbonate apatite contains similar macro and micro pores to human bone. It has an optimal resorption and remodeling profile when compared to  $\beta$ -tricalcium phosphate ( $\beta$ -TCP) and HA.<sup>5</sup>



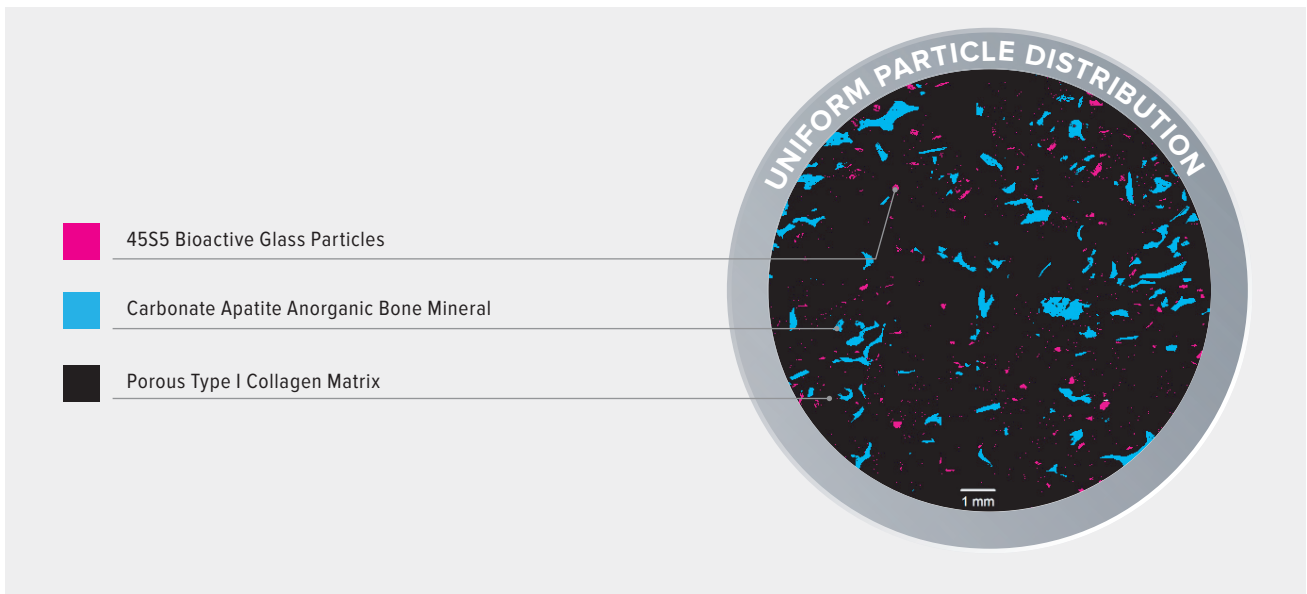
### Type I Collagen

The collagen in BoneSync™ BioActive filler is highly purified and retains biological factors.<sup>6</sup> It is 100% resorbable through normal metabolic pathways<sup>7</sup> and binds proteins and cells.<sup>6</sup>



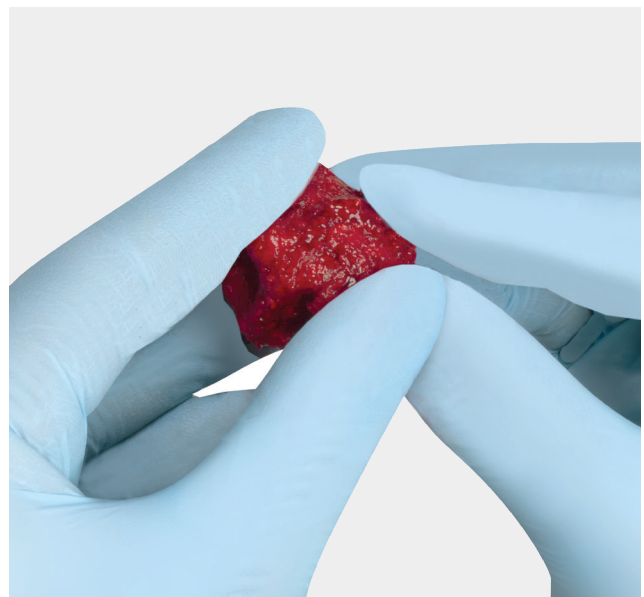
### 45S5 Bioactive Glass

- The 30% composition of bioactive glass in BoneSync BioActive filler creates a favorable environment for bone regeneration and osteoblast attachment.<sup>1</sup>
- Bioactive glass is incorporated within the suggested critical range of 5% to 40% for optimal osteoblast growth and calcium phosphate formation in a composite.<sup>8</sup>



### Uniform Particle Distribution

BoneSync™ BioActive bone void filler has a uniform distribution of bioactive glass and mineral particles throughout the matrix, which is achieved through a proprietary manufacturing process.<sup>9</sup>



### Moldable Advantage

- BoneSync BioActive filler can be combined with either autogenous bone marrow or autograft bone mixed with saline.
- Upon hydration, the product is moldable, flexible, and absorbent and will resist migration.
- BoneSync BioActive filler is nearly 2x more absorbent than Vitoss® bioactive foam.<sup>9</sup>

Vitoss is a registered trademark of Stryker.

## Ordering Information

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### BoneSync™ BioActive Bone Void Filler

Product Description	Item Number
BoneSync BioActive Matrix Strip, 5 cc	ABS-3500-05
BoneSync BioActive Matrix Strip, 10 cc	ABS-3500-10
BoneSync BioActive Matrix Strip, 20 cc	ABS-3500-20
BoneSync BioActive Matrix Strip, 40 cc	ABS-3500-40
BoneSync BioActive Matrix Putty, 2.5 cc	ABS-3400-02
BoneSync BioActive Matrix Putty, 5 cc	ABS-3400-05
BoneSync BioActive Matrix Putty, 10 cc	ABS-3400-10
BoneSync BioActive Matrix Putty, 20 cc	ABS-3400-20

## References

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This description of technique is provided as an educational tool and clinical aid to assist properly licensed medical professionals in the usage of specific Arthrex products. As part of this professional usage, the medical professional must use their professional judgment in making any final determinations in product usage and technique. In doing so, the medical professional should rely on their own training and experience, and should conduct a thorough review of pertinent medical literature and the product's directions for use. Postoperative management is patient-specific and dependent on the treating professional's assessment. Individual results will vary and not all patients will experience the same postoperative activity level and/or outcomes.

View U.S. patent information at [www.arthrex.com/corporate/virtual-patent-marking](http://www.arthrex.com/corporate/virtual-patent-marking)

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