



# AltaPore

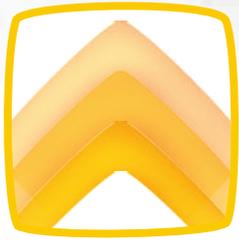
*Bioactive Bone Graft*  
*Enhanced Porosity with Silicate Substitution*

**Enhance**  
Bone Growth<sup>\*1</sup>



\*Preclinical data. Results may not correlate to performance in humans.

**Baxter**



# AltaPore

*Bioactive Bone Graft*  
*Enhanced Porosity with Silicate Substitution*

## Introducing the Next Generation Silicate Substituted Bone Graft Substitute

**ALTAPORE** is a bioactive and osteoconductive silicate substituted calcium phosphate bone void filler. **ALTAPORE** contains microgranules, sized 1–2 mm, with 80-85% macro porosity and 32-46% micro porosity, suspended in an absorbable aqueous gel carrier. The interconnected and open porous structure of the silicate-substituted calcium phosphate phase of **ALTAPORE** is similar to human cancellous bone and is designed to promote enhanced bone growth.<sup>1</sup>

## Optimized Porosity to Enhance Bone Growth

### Earlier Vascularization<sup>2\*</sup>

The enhanced porosity of **ALTAPORE** Bioactive Bone Graft promotes early vascularization, which plays a central role in the bone formation process by providing oxygen, nutrients, and growth factors indispensable for appropriate bone development.<sup>3</sup>



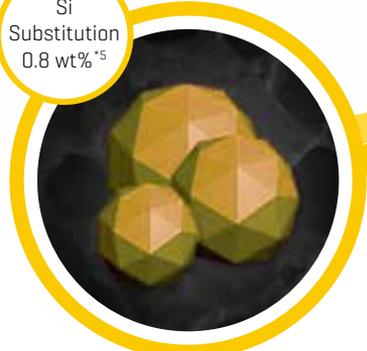
### Enhanced Cellular Activity<sup>2\*</sup>

The enhanced macro and micro porosity of **ALTAPORE** Bioactive Bone Graft provides for an increased surface area and topography, which facilitate the increased proliferation and differentiation of osteoblasts along the surface of the graft and promote increased new bone formation.



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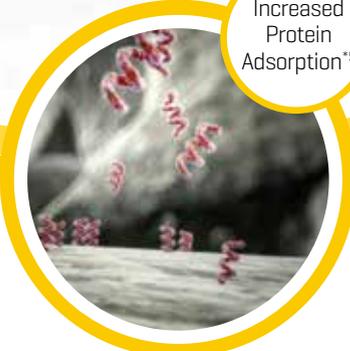
Si  
Substitution  
0.8 wt%<sup>\*5</sup>



Negative  
Surface  
Charge<sup>\*5</sup>



Increased  
Protein  
Adsorption<sup>\*5</sup>



## Versatility and Ease of Use

**ALTAPORE** Bioactive Bone Graft is designed for use as a standalone bone graft substitute or as an autograft extender. While not necessary, it can be combined with autologous bone (autograft) or bone marrow aspirate (BMA) to provide the bioactive and osteoconductive matrix with osteogenic factors.<sup>1</sup>

The precise handling characteristics of **ALTAPORE** allow the putty to be molded into multiple shapes to adapt to various surgical needs, designed to instill confidence while handling when using as standalone, with autograft, or BMA.



**ALTAPORE**  
as a standalone



Ratio up to 2:1

**ALTAPORE** : BMA

Ratio up to 1:3

**ALTAPORE** : Autograft

Increased Cell Attachment\*<sup>2</sup>



Accelerated Bone Formation\*<sup>2</sup>



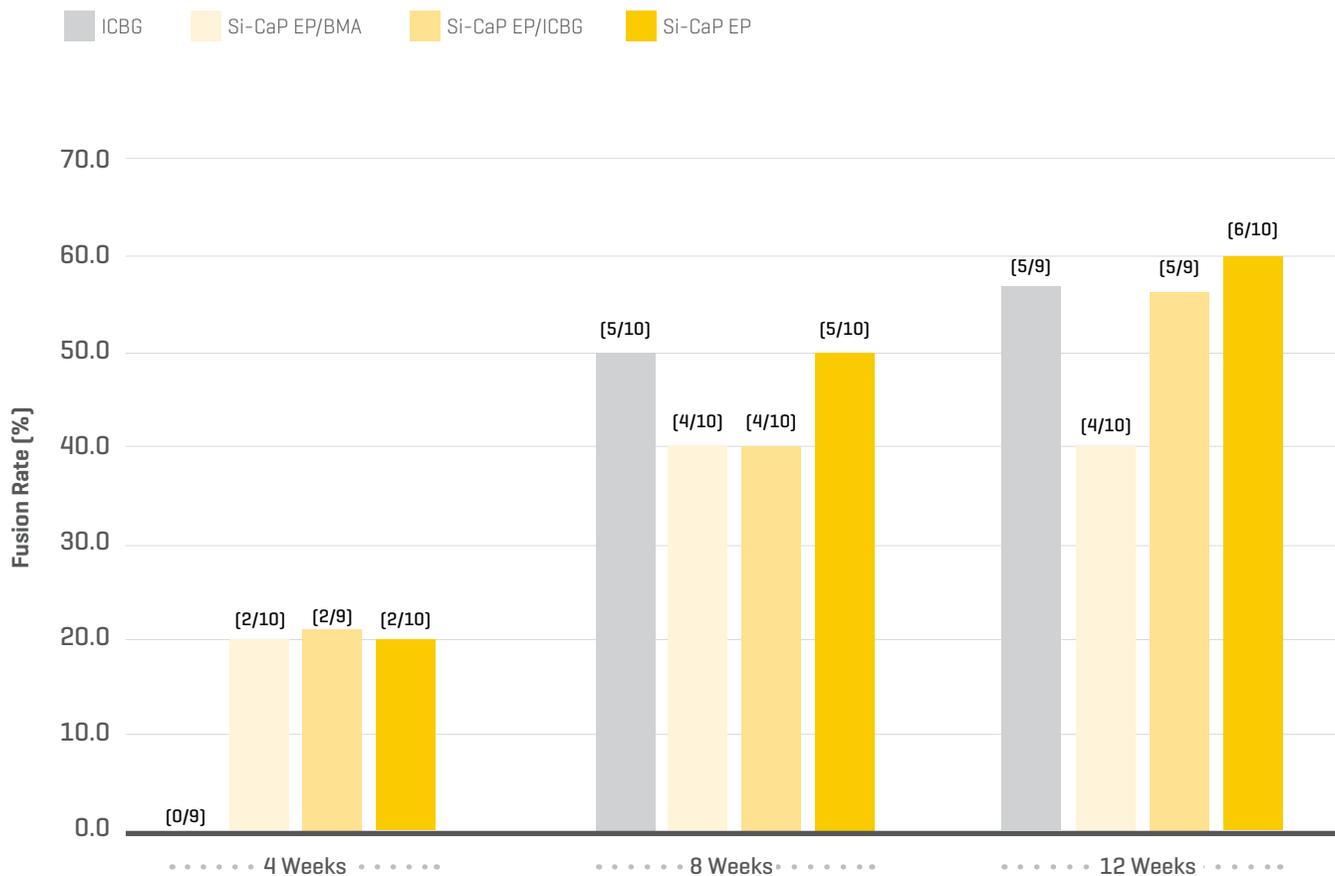
Natural Remodeling and Graft Resorption\*<sup>5</sup>



## Enhanced Performance

### Comparable Results to Autograft<sup>6,7,8</sup>

Iliac crest autograft is the commonly utilized “gold standard” graft material in spine surgical techniques. In a pre-clinical posterolateral fusion model, **ALTAPORE** exhibited similar fusion rates to autograft.<sup>6</sup>



#### Fusion rates were established by manual palpation<sup>9</sup>

Fusion was assessed by manual palpation of the treated segment by three blinded, independent reviewers. “Fusion” was determined if no motion was detected in flexion or extension. At 8 and 12 weeks, SiCaP EP, ICBG+SiCaP EP, and SiCaP EP+BMA exhibited comparable fusion rates to ICBG.

\*Preclinical data. Results may not correlate to performance in humans.

**80-85%**

Macro  
Porosity<sup>4</sup>

**31-47%**

Micro  
Porosity<sup>4</sup>

**0.8 wt%**

Silicone  
Level<sup>5</sup>



### Micro-granule Characteristics:

**ALTAPORE** contains microgranules, sized 1–2 mm, with 80-85% macro porosity and 31-47% micro porosity, suspended in an absorbable aqueous gel carrier. **ALTAPORE** contains 0.8% silicon by weight, which in preclinical studies was shown to be optimal for bone formation.<sup>5</sup>

## INDICATIONS FOR USE

**ALTAPORE** is an implant intended to fill bony voids or gaps of the skeletal system (i.e., extremities, pelvis and posterolateral spine) and may be used with autograft as a bone graft extender or bone marrow aspirate. These osseous defects are surgically created or the result of traumatic injury to the bone and are not intrinsic to the stability of the bony structure.

**ALTAPORE** resorbs and is replaced with bone during the healing process.

## IMPORTANT RISK INFORMATION

**ALTAPORE** is contraindicated where the device is intended as structural/load-bearing support in the skeletal system. **ALTAPORE** has not been cleared for use in vertebroplasty. Attempts should not be made to modify the size of the granules or to change their shape. It is important to maximize contact between existing bone and the implant to ensure proper bone regeneration.

The effect of mixing **ALTAPORE** Bioactive Bone Graft with substances other than bone marrow aspirate or autologous bone is unknown.

**Rx Only.** For safe and proper use please refer to full device Instructions for Use for Contraindications, Warnings, and Precautions.

Product Name	Product Size	Order Code
 <b>AltaPore</b> Bioactive Bone Graft Enhanced Porosity with Silicate Substitution	1.5 mL	1504319
	2.5 mL	1504320
	5 mL	1504321
	10 mL	1504322
	20 mL	1504323

*For more information, contact your local sales representative or call 1-888-229-0001*

#### References:

1. ALTAPORE Bioactive Bone Graft Instructions for Use.
2. Campion CR, Chandler C, Buckland T, Hing K. Increasing strut porosity in silicate-substituted calcium-phosphate bone graft substitutes enhances osteogenesis. *J Biomed Mater Res B Appl Biomater.* 2011 May;97(2):245-54.
3. Hankenson KD, Dishowitz M, Gray C, Schenker M. Angiogenesis in Bone Regeneration. *Injury.* 2011 Jun;42(6):556-61.
4. ALTAPORE 510(k)
5. Hing KA, Revell PA, Smith N, Buckland T. Effect of silicon level on rate, quality and progression of bone healing within silicate-substituted porous hydroxyapatite scaffolds. *Biomaterials.* 2006 Oct;27(29):5014-26.
6. Guth K, Campion C, Buckland T, Hing KA. Effect of silicate-substitution on attachment and early development of human osteoblast-like cells seeded on microporous hydroxyapatite discs. *Adv Eng Mater.* 2010;12(4):B77-B82.
7. Hing KA, Wilson LF, Buckland T. Comparative performance of three ceramic bone graft substitutes. *Spine J.* 2007; 7(4):475-490.
8. Fredericks DC, Petersen EB, Saihi N, Corley KGN, DeVries N, Grosland NM, Smucker JD. Evaluation of a novel silicate substituted hydroxyapatite bone graft substitute in a rabbit posterolateral fusion model. *The Iowa Orthopaedic Journal.* 2013;33:25-32.