

BioNgraft™

Tricalcium phosphate (b-TCP)

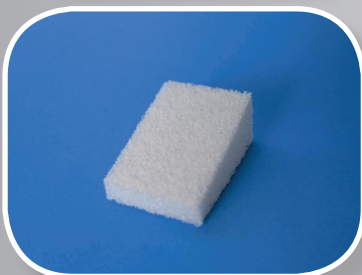
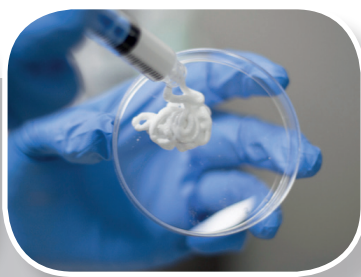
Advanced Medical Solutions Synthetic Biomaterials

Orthopaedics

Trauma

Spine

Sports Medicine



- Granules
- Sticks
- Wedges
- Blocks
- Injectable Putty
- Flexible Strip

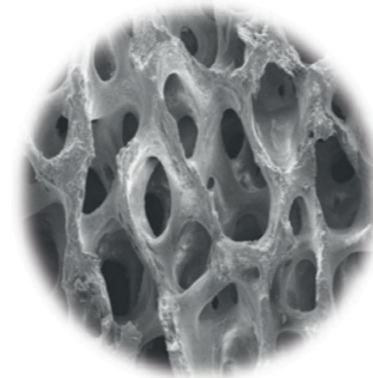
BioNgraft™

Tricalcium phosphate (b-TCP)

General Features of BIONGRAFT Bone Substitutes

Biongraft is a porous synthetic ceramic, based in Tricalcium Phosphate (b-TCP). The TCP component, resorbs quickly and allows the ceramic to have properties which facilitate excellent osteointegration.

Our Synthetic bone substitutes are manufactured under patented process, which allow us to mimic the microarchitecture of the human bone. The interconnected porosity allows a full colonization of the graft by the host cells



Biongraft is indicated for use as a bone graft substitute to the support of bone tissue formation at non-load bearing osseous defects created surgically or through traumatic injury.

It may be combined with autogenous blood and/or bone marrow as well as with other bone grafts.

Biongraft features an interconnected porosity that guides the regeneration of the bone.

As the bone healing process occurs, Biongraft is resorbed and replaced by new bone.

100% Synthetic

Contains no tissue of human or animal origin therefore carries no risk of disease transmission.

Osteoconductive

Act as a scaffold and support bone tissue regeneration. Similar to the mineral found in bone tissue.

Bioresorbable

With its optimized porous structure and chemical composition, BIONGRAFT is suitable for the continuous remodeling of cycle of healthy bone. b-TCP resorbs over time and be replaced with bone during healing process.

Radiopaque

Could be detected via CT and X-ray

Versatile

Available in granules, sticks, blocks, wedges, and putty form at different sizes for different indications.



Biongraft Injectable Putty is an injectable and formable paste bone graft ready to be used, based on hydrogel and Beta-tricalcium phosphate (β -TCP), including ZrO_2 nanoparticles for antibacterial efficacy. **Biongraft** is a safe and fully biocompatible material which is designed to act as an osteoconductive scaffold to support the ingrowth and fusion of adjacent viable bone when placed in an osseous environment. It also provides a bone void filler that resorbs and is replaced with bone during the healing process.

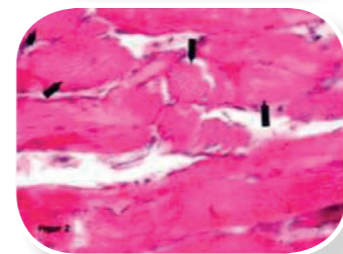
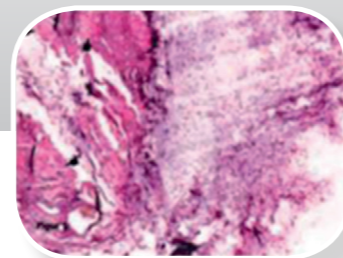
Requires no mixing. Pre-loaded in a convenient applicator, syringe ready for direct placement into the defect.

Easily molded by hand as needed.

Applications

Biongraft Injectable Putty is intended for use in non-load bearing defects in:

- Osteotomies
- Hip and Knee Revision Surgery
- Fractures with loss of bone material
- Acetabular reconstruction
- Metaphysial fractures
- Extremity fractures
- Filling cages in spinal surgery



Osteoid formation, 2 months after implantation of BioNgraft Moldable Synthetic Bone Substitute (putty) in skeletal muscle

Easy Handling

Step 1: Open the blister in sterile area. Remove the cap of the injector in sterile field just ten minutes before the implantation. **Biongraft Injectable Putty** is supplied as a paste in the injector, ready for use.

Step 2: Fill the defect area completely or shape bone substitutes according to the condition of the defect area. It should come into direct contact with all surfaces on the defect.

Step 3: Secure the surgical site after implanting in order to prevent motion, leakage or implant migration. When excess fluid is present in the surgical field, the surgeon may use proper measures (i.e. catheterization, suction and application of bone wax) to reduce bleeding.



Biongraft Granules, Wedges, Blocks is a Beta Tricalcium phosphate (b-TCP) based porous bone graft substitutes including ZrO_2 nanoparticles for antibacterial efficacy.

The interconnectivity of porous structure and microporosity assist capillary motion of blood and body fluids, enhanced penetration for osteogenic cells, and ossification of the synthetic matrix. For macroporosity,

Biongraft Granules, Sticks, wedges & Blocks allows deep invasion of bone cells into the matrix.

Biongraft polygonal granules have different particle size between 0,25 - 7mm.

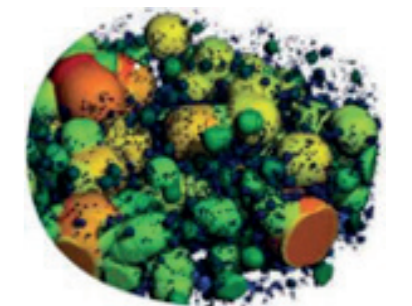
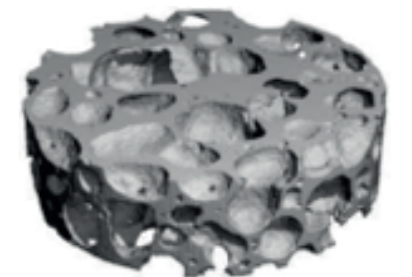
The irregularly shaped granules promote interlocking and improve mechanical stability.

Applications

Biongraft Granules, Wedges, Blocks is indicated for filling bone voids or defects of the skeletal system in:

- Osteotomies
- Fractures with loss of bone material
- Acetabular reconstruction
- Metaphysial fractures
- Extremity fractures
- Vertebral fusion
- Hip and Knee Revision

Biongraft Granules, Wedges, Blocks can be mixed with autograft, bone marrow, blood.



Micro CT analysis of Granules

BioNgraftTM Flex

Flexible Synthetic Bone Substitute

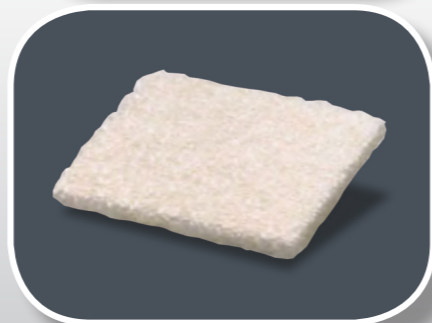
Biongraft Flex is composed of b-TCP and resorbable PLA based Synthetic Polymer.

The polymer of the Flex is metabolite lactic acid and is degraded to CO₂ and H₂O.

Biongraft Flex has a unique micro and macro porous structure that most closely resemble the architecture of natural human bone.

It gradually dissolves in the body, promoting new bone formation through the release of calcium and phosphate ions.

In time, the porous structure becomes completely infiltrated with cells and replaced by healthy viable bone.



Indications

Biongraft Flex is indicated to be gently packed or placed into bony voids or gaps of the skeletal system (i.e. the extremities spine and pelvis.), and to fill cavities or defects resulting from cysts, tumors, or other causes major disc collapse

Easy Application

- **Biongraft Flex** can be applied directly or in combination with bone marrow aspirate/blood to the surgical site.
- Wetting **Biongraft Flex** increases Flexibility.
- Place **Biongraft Flex** into the surgical site just before the closure of the surgical area once all metallic implants are stable.
- **Biongraft Flex** can be cut to fit into a lumbar or cervical cage.

Specifications

BioNgraftTM

Moldable Synthetic Bone Substitute

REFERENCE CODE	DESCRIPTION	PACKAGING	VOLUME
TBGP01	Putty (Syringe 1cc)	1 unit/Box	1 cc
TBGP03	Putty (Syringe 3cc)	1 unit/Box	3cc
TBGP05	Putty (Syringe 5cc)	1 unit/Box	5cc
TBGP10	Putty (Syringe 10cc)	1 unit/Box	10cc

BioNgraftTM

Tricalcium phosphate (b-TCP)

REFERENCES	FORM	SIZE	QUANTITY
TBGG020405	Crunch	2-4mm	5cc
TBGG020410	Crunch	2-4mm	10cc
TBGG020415	Crunch	2-4mm	15cc
TBGG020420	Crunch	2-4mm	20cc
TBGG020430	Crunch	2-4mm	30cc
TBGG040705	Crunch	4-7mm	5cc
TBGG040710	Crunch	4-7mm	10cc
TBGG040715	Crunch	4-7mm	15cc
TBGG040720	Crunch	4-7mm	20cc
TBGG040730	Crunch	4-7mm	30cc
TBGEW082530	Wedge	8x25x30 mm	1 Unit
TBGEW102530	Wedge	10x25x30 mm	1 Unit
TBGEW122530	Wedge	12x25x30 mm	1 Unit
TBGEW142530	Wedge	14x25x30 mm	1 Unit
TBGES44204	Block	4x4x20mm	4 Units
TBGES44205	Block	5x5x20mm	4 Units

BioNgraftTM Flex

Flexible Synthetic Bone Substitute

REFERENCES	DESCRIPTION	SIZE	PACKAGING
TBGF25254	Flexible Bone Strip	25x25x4mm	1 Unit/Box
TBGF25804	Flexible Bone Strip	25x80x4mm	1 Unit/Box
TBGF25805	Flexible Bone Strip	25x80x5mm	1 Unit/Box
TBGF25806	Flexible Bone Strip	25x80x6mm	1 Unit/Box
TBGF35605	Flexible Bone Strip	35x60x5mm	1 Unit/Box



Produced exclusively for

EOS

MEDICAL SOLUTIONS

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