bioceramed

biomaterials for tissue regeneration

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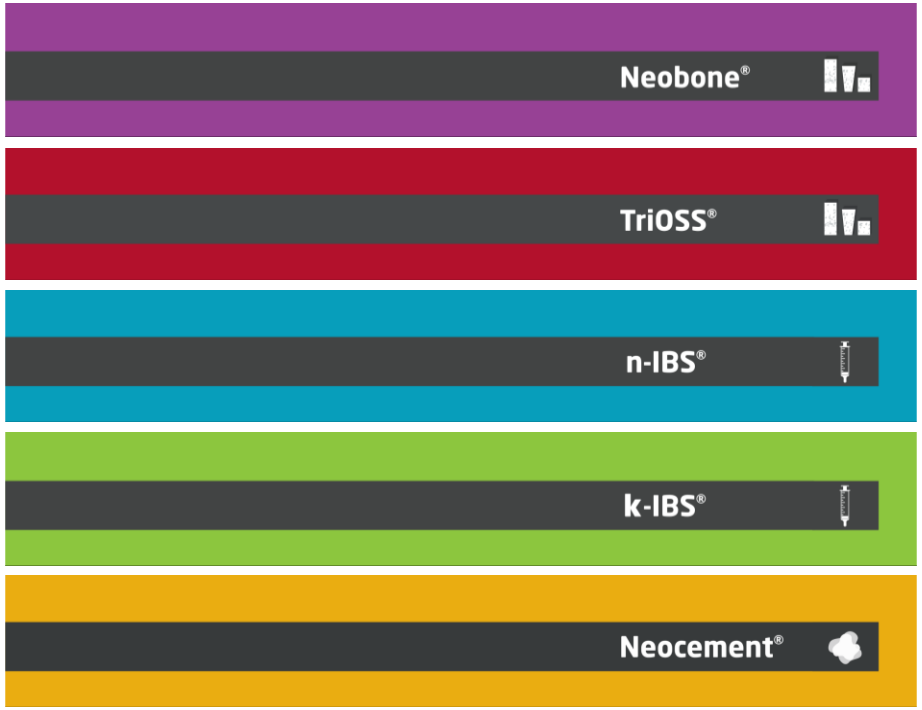
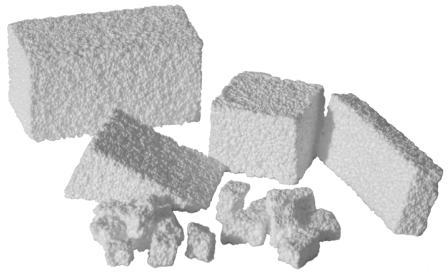
Our solutions

bioceramed offers different of solutions for bone regeneration in orthopedic, spinal and dental areas.

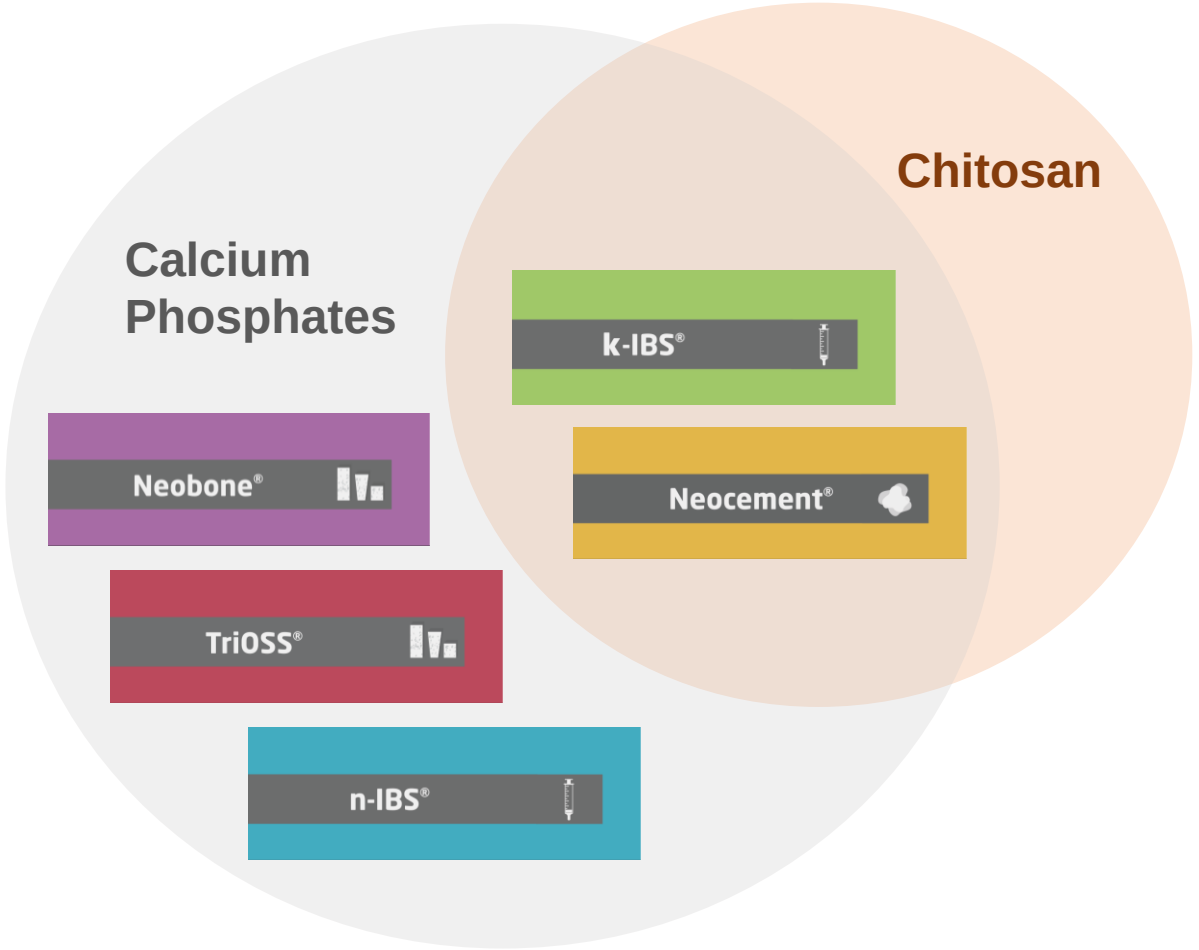
We provide 3D structures, injectable and cement bone substitutes.





Our solutions

Our products are all **calcium phosphate** based, providing a **highly osteoconductive and bioactive structure** and forming a strong **bond to the host bone** with adequate environment for the **remodeling process**.[1]



Neocement® and **k-IBS®** have also incorporated in their composition **chitosan**, a polysaccharide widely used in orthopedic treatment since it was shown to **promote osteoblastic cell growth**.[2]

[1] Tang et al. The material and biological characteristics of osteoinductive calcium phosphate ceramics. Regen Biomater. 2018 Feb; 5(1): 43–59
[2] Rodríguez-Vásquez et al. Chitosan and Its Potential Use as a Scaffold for Tissue Engineering in Regenerative Medicine. Biomed Res Int. 2015; 2015: 821279

Our solutions

Neobone®

Biphasic calcium phosphate based ceramic

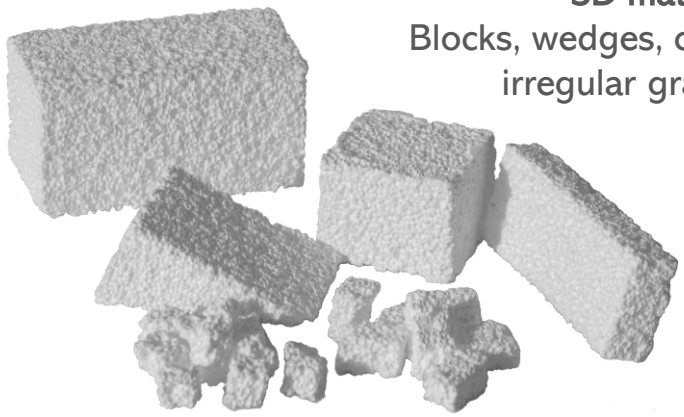
75% HA + 25% β-TCP

TriOSS®

Beta-tricalcium phosphate ceramic

> 95% β-TCP

3D matrix
Blocks, wedges, cylinders and irregular granules.



bioceramed 3D products **Neobone®**, a biphasic calcium phosphate, and **TriOSS®**, a β-tricalcium phosphate, present a porous structure (porosity >50%) that resembles the structure of the human bone.

Dense hydroxyapatite (HA) is slowly degradable. tricalcium phosphate (TCP) is fast degradable and biphasic calcium phosphates containing both HA and TCP are in between.

The different compositions of **Neobone®** and **TriOSS®** allows to chose the product that best suits the desired application.

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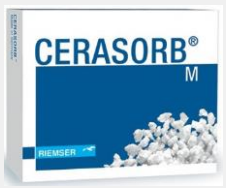
Our solutions

Neobone®

TriOSS®

Similar products on market

Neobone®		• **Biphasic composition: 75% Hap + 25% β-TCP** • **Porosity: 50 a 70%** • **Pore size: 200 - 500µm** • **Compressive strength > 0.2MPa (7-15MPa)**
TCH® (Kasios)		• Biphasic composition: 75% Hap + 25% β-TCP • Porosity: 60 - 80% • Pore size: 200 - 500µm • Compressive strength: > 0,5MPa
MBCP® (Biomatlante)		• Biphasic composition: 60% Hap + 40% β-TCP • Porosity: 70% • Pore size: 300 - 600µm
Ceraform® (Teknimed)		• Biphasic composition: 65% Hap + 35% β-TCP • Porosity: 60% • Pore size: 300 - 500µm

TriOSS®		• **Composition: >95% β-TCP** • **Porosity: 50 - 70%** • **Pore size: 200 - 500µm** • **Compressive strength > 0.2MPa**
CERASORB® M (Riemser)		• Composition: β-TCP • Porosity: 65% • Pore size: 5 - 500µm
chronOS® (DePuySynthes)		• Composition: β-TCP • Porosity: 60 - 70% • Pore size: 100 - 500µm • Compressive strength: 5MP

Our solutions

Clinical applications

- ***Indications***

Neobone® and TriOSS® are intended to be use in dental and orthopaedic fields.
For dental applications, they are used to increase bone volume to allow implant placement and improve the aesthetic outcome of the final implant restoration.
For orthopaedic applications, the products can be used to repair and rebuild bone defects in hips, knee, spine, and other bones (e.g. pseudoarthrosis, arthrodesis, osteotomies and osteosynthesis surgeries).
It also can be used to repair bone loss caused by some types of factures, spinal fusion and tumour or cyst resection.
The products are biocompatible, radiopaque, avoid the use of autologous graft and allows shorter operating time.
Neobone® and TriOSS® cannot be used in applications that are subject to high mechanical load stress.

- ***Contraindications***

Do not apply Neobone® and TriOSS® in case of: Acute or chronic infection at the surgical site; Metabolic affections; Severe degenerative disease.
Do not apply Neobone® and TriOSS® in places that allows the ceramic particles migration to the articular cavities or meningeal spaces. Neobone® and TriOSS® are contraindicated in providing structural support in the skeletal system and must not be used where the implantation site is unstable and not rigidly fixated.

- ***Sterilization***

Neobone® and TriOSS® are sterilized by gamma irradiation. Sterility is only guaranteed if the package is dry, unopened and undamaged and if the indicator is red.

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Neobone®

TriOSS®

Our solutions

Clinical applications

3D matrix
Blocks, wedges, cylinders
and irregular granules.

(1) 

 (2)

(3) 

 (4)

(5) 

 (6)

(1) Fractures with non-union; infected fractures

(2) Pseudarthrosis

(3) Bone cyst (Tumors)

(4) Spine Arthrodesis

(5) Tibial Plateau fractures

(6) Maxillofacial and Periodontal surgery

Our solutions

n-IBS®

Nano-hydroxyapatite injectable bone substitute

- Ready-to-use product
- Composed of hydroxyapatite nanoparticles
- Nanoparticles diameter: 100nm
- Size of microparticles nanocrystalline: 10µm
- Specific surface area: 80m^2/g
- n-IBS will remain as soft gel during the healing process

Similar products on market

n-IBS®		Osiq® (Kyeron)	
Ostim® (Heraeus)		Neve® (Spineway)	

Our solutions

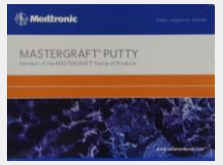
k-IBS®

Chitosan injectable bone substitute

- Ready-to-use product
- Composed of biphasic sphere-like granules 75% Hap – 25% β – TCP
- Polymer matrix: **Chitosan**
- Easy application
- k-IBS will remain as soft gel during the healing process

Similar products on market

None of the available products incorporates chitosan, using other substances as polymeric matrix

k-IBS®		Mastergraft® Putty (Medtronic)	
MBCP® GelTM (Biomatlante)		Ceros® Putty (Mathys)	

Our solutions

Clinical applications

- ***Indications***

n-IBS® is intended for use in filling bony voids or gaps of the skeletal system (extremities, pelvis and spine) that are not intrinsic to the stability of the bony structure and intraoral bone defects. These defects may be surgically created or from traumatic injury to the bone. n-IBS® will remain as a soft gel during the healing process and is not intended to provide structural support. n-IBS® must not be used where the implantation site is unstable and not rigidly fixated.

k-IBS® intended use is the filling l bony defects and bone voids or gaps of the skeletal system (extremities, pelvis and spine) that are not intrinsic to the stability of bony structure. These osseous defects may be surgically created or can be caused by traumatic injury of the bone. k-IBS® is to be used by direct injection of the product in the bone void and will be resorbed in the body, supporting the ingrowth of viable bone in bone defect. k-IBS® acts as a temporary osteoconductive scaffold for the ingrowth of viable bone. k-IBS® will remain as a soft gel during the healing process and is not intended to provide structural support.
k-IBS® must not be used where the implantation site is unstable and not rigidly fixed.

- ***Contraindications***

Do not apply n-IBS® and k-IBS® in case of: Acute or chronic infection at the surgical site; Metabolic affections; Severe degenerative disease.
Do not apply n-IBS® and k-IBS® in places that allows the ceramic particles migration to the articular cavities or meningeal spaces. n-IBS® and k-IBS® are contraindicated in providing structural support in the skeletal system and must not be used where the implantation site is unstable and not rigidly fixated.

Physicians must exercise precautions when using k-IBS® in patients with known shellfish allergies.

- ***Sterilization***

n-IBS® and k-IBS® are sterilized by gamma irradiation. Sterility is only guaranteed if the package is dry, unopened and undamaged and if the indicator is red.

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Our solutions

Clinical applications

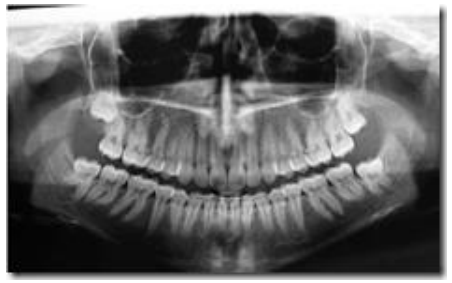
Injectable bone substitutes

(1)

(2)

(3)

(4)



(1) Filling cages in spinal column

(2) Reconstruction of post-trauma bone defects

(3) Bone cyst (Tumors)

(4) Maxillofacial and Periodontal surgery

Our solutions

Neocement®

Chitosan and calcium phosphate based cement

- **Hydroxyapatite Cement with Chitosan**
- Compressive strength **> 4MPa**
- Cement sets with **isothermal temperature** (without tissue necrosis)
- Can be molded into desired shape and **applied directly** in the voids or gaps

Similar products on market

Neocement®	
Mimix® (Zimmer Biomet)	
Norian® SRS® (Synthes)	

Clinical applications

(1) Craniofacial surgery

(2) Filling of bone voids

Our solutions

Clinical applications

Neocement®

- ***Indications***

NeoCement® is intended to fill small bone defects in craniofacial and trauma surgery and must be applied directly in the injured site.
NeoCement® cannot be subjected to any mechanical loading applications.
NeoCement® is not intended to provide structural support in the skeletal system and must not be used where the implantation site is unstable and not rigidly fixated.

- ***Contraindications***

Do not apply NeoCement® in case of: Acute or chronic infection at the surgical site; Metabolic affections; Severe degenerative disease. NeoCement® is contraindicated in providing structural support in the skeletal system and must not be used where the implantation site is unstable and not rigidly fixated.
Physicians must exercise precautions when using k-IBS® in patients with known shellfish allergies.

- ***Sterilization***

NeoCement® is sterilized by gamma irradiation. Sterility is only guaranteed if the package is dry, unopened and undamaged and if the indicator is red.

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Ordering information – Available references

Biphasic calcium phosphate based ceramic
75% HA + 25% β-TCP

Neobone Blocks - size 30x20x12mm
Neobone Blocks - size 20x40x12mm
Neobone Blocks - size 20x20x10mm
Neobone Blocks - size 15x15x20mm
Neobone Blocks - size 15x15x30mm
Neobone Blocks - size 10x10x20mm
Neobone Blocks - size 10x10x5mm
Neobone Blocks - size 10x30x5mm
Neobone Blocks - size 10x30x10mm
Neobone Wedges –size 20x15x8mm
Neobone Wedges –size 20x15x10mm
Neobone Wedges –size 20x15x12mm
Neobone Wedges –size 20x15x14mm
Neobone wedges - – size 25x20mm- 10°
Neobone wedges - – size 25x20mm- 14°
Neobone wedges - – size 25x20mm- 18°
Neobone wedges - – size 25x20mm- 26°
Neobone wedges - – size 25x20mm- 22°
Neobone irregular Granules 2-4mm

Neobone irregular Granules 4-6mm
Neobone sphere-like Granules 75-125µm
Neobone sphere-like Granules 125-355µm
Neobone sphere-like Granules 355-500µm
Neobone sphere-like Granules 500-1000µm
Neobone sphere-like Granules 1-2mm
Neobone Irregular Granules 500-1000µm
Neobone Irregular Granules 1-2mm
Neobone cylinders – size 25x9,5mm
Neobone cylinders – size 25x10,5mm
Neobone cylinders – size 25x12,5mm
Neobone cylinders – size 25x15mm
Neobone cylinders – size 25x17,5mm
Neobone semi-circular wedges – size 35x25mm- 7°
Neobone semi-circular wedges – size 35x25mm- 10°
Neobone semi-circular wedges – size 35x25mm- 13°
Neobone semi-circular wedges – size 35x25mm- 7°
Neobone semi-circular wedges – size 35x25mm- 10°
Neobone semi-circular wedges – size 35x25mm- 13°

Ordering information – Available references

TriOSS®

Beta-tricalcium phosphate ceramic

> 95% β-TCP

TriOSS Blocks 10x10x5mm
TriOSS Blocks 30x10x5mm
TriOSS Blocks 10x10x10mm
TriOSS Blocks 20x10x10mm
TriOSS Blocks 30x10x10mm
TriOSS Blocks 20x15x15mm
TriOSS Blocks 30x15x15mm
TriOSS Irregular Granules 0,5-1mm
TriOSS Irregular Granules 1-2mm
TriOSS Irregular Granules 2-4mm
TriOSS Irregular Granules 4-6mm
TriOSS Wedges 20x15x8mm
TriOSS Wedges 20x15x10mm
TriOSS Wedges 20x15x12mm
TriOSS Wedges 20x15x14mm
TriOSS Semi-Circular Wedges type 1- 35x25mm – 7º
TriOSS Semi-Circular Wedges type 1- 35x25mm – 10º
TriOSS Semi-Circular Wedges type 1- 35x25mm – 13º
TriOSS Semi-Circular Wedges type 3- 35x25mm – 7º
TriOSS Semi-Circular Wedges type 3- 35x25mm – 10º
TriOSS Semi-Circular Wedges type 3- 35x25mm – 13º

TriOSS Cylinders 15mm x 6mm
TriOSS Cylinders 15mm x 7,5mm
TriOSS Cylinders 15mm x 10mm
TriOSS Cylinders 25x9,5mm
TriOSS Cylinders 25x10,5mm
TriOSS Cylinders 25x12,5mm
TriOSS Cylinders 25x15mm
TriOSS Cylinders 25x17,5mm
TriOSS Ring 10mm x 6 mm x 3,5mm
TriOSS Ring 10mm x 7 mm x 3,5mm
TriOSS Ring 10mm x 10 mm x 3,5mm
TriOSS Ring 10mm x 9,5 mm x 3,5mm
TriOSS Cylinders 15mm x 6mm
TriOSS Cylinders 15mm x 7,5mm
TriOSS Cylinders 15mm x 10mm
TriOSS Sphere-Like Granules 75-125µm
TriOSS Sphere-Like Granules 125-355µm
TriOSS Sphere-Like Granules 355-500µm
TriOSS Sphere-Like Granules 500-1000µm
TriOSS Sphere-Like Granules 1-2mm

Ordering information – Available references

Nano-hydroxyapatite injectable bone substitute

n-IBS containing 1cc - 1 syringe
n-IBS containing 3cc - 1 syringe
n-IBS containing 5cc – 1 syringe
n-IBS containing 10cc – 2 syringe 5cc
n-IBS containing 15cc - 3 syringe 5cc

Chitosan injectable bone substitute

k-IBS containing 1cc - 1 syringe
k-IBS containing 3cc - 1 syringe
k-IBS containing 5cc - 1 syringe
k-IBS containing 10cc - 2 syringe 5cc
k-IBS containing 15cc - 3 syringe 5cc

Chitosan and calcium phosphate based cement

Neocement containing 10g
Neocement containing 20cc

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