Regenerative Solutions:
SYMBIOS® Biphasic Bone Graft Material
SYMBIOS® Collagen Membrane SR
SYMBIOS® Biphasic Bone Graft Material

Scanning electron micrograph (SEM): Longitudinal section of phycogenic biphasic 20% HA/80% ß-TCP granule (x 5000)

Scanning electron micrograph (SEM): Cross section of phycogenic biphasic 20% HA/80% ß-TCP granule (x 6000)
SYMBOIS Biphasic Bone Graft Material (BGM) is a resorbable inorganic bone forming material in granular form of plant origin derived from red marine algae. The chemical composition of this interconnected porous biological product is similar to the inorganic part of the human bone. SYMBOIS Biphasic BGM is a composition of 20% hydroxyapatite (HA) and 80% β-tricalciumphosphate (β-TCP). Due to the high tricalcium-phosphate content of the product it resorbs significantly faster than pure hydroxyapatite. The biphasic BGM is biocompatible and osteoconductive. It can be used for indications such as treatment/filling of periodontal or peri-implant defects, extraction sockets and for sinus elevation grafting. For optimal tissue regeneration the defect should be covered by a membrane. The selection of the two grain sizes is dependent on the defect.

Recommended grain size:

- Grain size 0.2 mm to 1.0 mm, e.g. augmentation of small defects
- Grain size 1.0 mm to 2.0 mm, e.g. augmentation of lateral defects and sinus floor elevation

- Osteoconductive
  Bone analogous properties and interconnecting pores

- Resorption kinetics in the sense of restitutio ad integrum
  Material degradation and bone remodeling/healing are balanced. Resorbs almost completely

- Volume stability
  The resorption properties enable volume stability during bone formation

- Straightforward application
  Saturation with patient’s blood and addition of autogenous bone chips improve healing

Resorption kinetics in a pre-clinical animal study

Histomorphometric analysis

**Bone Graft Material (100% HA)**

Amount of newly formed bone respectively remaining Bone Graft Material (100% HA) in a specified augmented area

**SYMBOIS® Biphasic BGM (20/80% HA/β-TCP)**

Amount of newly formed bone respectively remaining Bone Graft Material (20/80% HA/β-TCP) in a specified augmented area

Percentage of newly formed bone in relation to remaining Bone Graft Material (BGM) 100% HA and biphasic BGM 20/80% HA/β-TCP respectively after placement 2, 4 and 8 weeks in cortical/spongious defects in sheep. Data on file.
Scanning electron micrograph (SEM): Cross-section of SYMBIOS Collagen Membrane SR consisting of a collagen fiber matrix that is clearly visible (x 5000).

SYMBIOS® Collagen Membrane SR
SYMBOIS Collagen Membrane SR (slow resorbable) is a bioresorbable, implantable collagen type I originating from bovine Achilles tendon. It is intended for use in dental surgery procedures. The membrane functions as a barrier, aiding in wound healing after dental surgery in cases with a dental implant, a bone defect or ridge reconstruction. Fiber matrix construction allows tissue integration, while preventing direct passage of bacteria and epithelial cells.

- **Safe for the patient**
  Manufactured from highly purified collagen type I derived from bovine Achilles tendon

- **Prevents epithelial downgrowth**
  Cell occlusive

- **You can suture or tack the membrane in place without tearing**
  Unique fiber orientation provides high tensile strength

- **Stiff enough for easy placement, yet easily drapes over ridge**
  Optimized flexibility. Can be placed either dry or hydrated

### Resorption kinetics

**In vivo resorption rate of SYMBOIS® Collagen Membrane SR**

![Graph showing resorption kinetics](image)

SYMBOIS Collagen Membrane SR has a resorption time of 26 to 38 weeks. Data on file.
## Order Numbers

### SYMBIOS® Biphasic Bone Graft Material

<table>
<thead>
<tr>
<th>ORDER NO.</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>31–0110</td>
<td>0.2 – 1.0 mm, 0.5 ml (for augmentation of small defects)</td>
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<tr>
<td>31–0111</td>
<td>0.2 – 1.0 mm, 1.0 ml (for augmentation of small defects)</td>
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<tr>
<td>31–0112</td>
<td>1.0 – 2.0 mm, 1.0 ml (for augmentation of lateral defects and sinus floor elevation)</td>
</tr>
<tr>
<td>31–0113</td>
<td>1.0 – 2.0 mm, 2.0 ml (for augmentation of lateral defects and sinus floor elevation)</td>
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### SYMBIOS® Collagen Membrane SR

<table>
<thead>
<tr>
<th>ORDER NO.</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>3290 5270</td>
<td>15 x 20 mm, 2 Membranes/box</td>
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<tr>
<td>3290 5271</td>
<td>20 x 30 mm, 2 Membranes/box</td>
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<tr>
<td>3290 5272</td>
<td>30 x 40 mm, 2 Membranes/box</td>
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</tbody>
</table>
Key references

**SYMBIOS® Biphasic Bone Graft Material**


**SYMBIOS® Collagen Membrane SR**


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1) SYMBIOS Biphasic Bone Graft Material is manufactured by AlgOss Biotechnologies GmbH

2) SYMBIOS Collagen Membrane SR is manufactured by Collagen Matrix, Inc.
About DENTSPLY Implants
DENTSPLY Implants offers comprehensive solutions for all phases of implant therapy, including ANKYLOS®, ASTRA TECH Implant System™ and XiVE® implant lines, digital technologies, such as ATLANTIS™ patient-specific CAD/CAM solutions and SIMPLANT® guided surgery, SYMBIOS® regenerative solutions, and professional and business development programs, such as STEPPS™. DENTSPLY Implants creates value for dental professionals and allows for predictable and lasting implant treatment outcomes, resulting in enhanced quality of life for patients.

About DENTSPLY International
DENTSPLY International Inc. is a leading manufacturer and distributor of dental and other healthcare products. For over 110 years, DENTSPLY’s commitment to innovation and professional collaboration has enhanced its portfolio of branded consumables and small equipment. Headquartered in the United States, the Company has global operations with sales in more than 120 countries.

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