ReOss® has a multi-pore three-dimensional architecture that creates an environment for new bone growth. The scaffold also provides a hospitable adhesive substrate that serves as a strong physical support for the infusion and growth of bone cells. The entire structure is an intricate, highly interconnected matrix with enhanced hydrophilic properties. Through a patented process utilizing barosynthesis, the biomaterial’s highly porous, synthetic polymer foam is permeated with osteoconductive sub-micron sized particles of HA. ReOss’s bone-like foam scaffold, osteoconductivity, and increased hydrophilic surface provide an environment for the stimulation of bone regeneration.

**Indication**

ReOss® is indicated for use in filling and/or augmenting intraoral/maxillofacial osseous defects; such as infrabony/ intrabony periodontal osseous defects, furcation defects, alveolar ridge osseous defects, tooth extraction sites and in sinus elevation procedures.

**ReOss® Sub-Micron HA Infused Synthetic Biomaterial**

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Sub-Micron HA Particles can begin to be seen permeating the PGLA Matrix at 50,000x. Red highlights are used here as visual aid.
ReOss® is hydrophilic and configured as a multi-pore three-dimensional scaffold engineered to integrate with the physiochemical state of bone tissue.

Overview of ReOss®: A Resorbable Bone-like Biocomposite PLGA/HA: Poly (lactic-co-glycolic) acid / Hydroxyapatite

ReOss® is a composite biomaterial comprised of two phases - a PLGA biodegradable polymer and a bioceramic. The polymer provides a structurally porous, and biocompatible5,6,7 three-dimensional matrix to which biological fluids can penetrate, and cells can adhere. The HA bioceramic, due to its chemical and structural similarity to the mineral phase of native bone, allows the biocomposite to create a bond with the living host bone.2,11

Sub-Micron HA Particles
In order to improve the bioactivity of the ceramic phase, ReOss® utilizes Sub-Micron-sized particulate Hydroxyapatite (HA). This particulate size HA shows improved osteointegration and faster degradation times over larger particulate HA, which can impede bone growth because of its slow biodegradation.1,2 Sub-Micron-sized HA also has been reported to augment protein adsorption and cell adhesion, further improving the ability for bone to regenerate.2

Multi-pore Resorbable Structure
The porosity of the polymer matrix of ReOss® also provides an excellent environment to aid in stimulating bone regeneration. Through a patented process involving high-pressure formation of the polymer matrix, ReOss® is replete with both macro and micropores. The micropores allow biological fluids and small molecules, which aid in cell growth to perfuse the matrix, enveloping and sustaining the osteogenic cells that attach to the macro pores of the scaffolds. As the cells begin to grow and develop, both phases of the biocomposite degrade, leaving behind a stable, natural bone matrix.7,8,9

Osteodynamics
Several studies have shown that biodegradable polymer/bioceramic composites can improve bone regeneration as compared with conventional composites by optimizing controlled resorption, osteogenesis and osteointegration.1,2,11 By controlling the parameters which determine the characteristics of resorption and osteoinductivity, ReOss® provides a superior vector for the stimulation of new bone growth.

References: