Medtronic

MASTERGRAFT® Matrix

Competitive Comparison

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	MASTERGRAFT® Matrix	VITOSS® Scaffold Foam (Orthovita, Inc.)	MOZAIK™ Osteoconductive Scaffold (Integra Life Sciences Corp.)	HEALOS® II Bone Graft (DePuy Spine, Inc.)
Technology Type	Synthetic Bone Graft	Synthetic Bone Graft	Synthetic Bone Graft	Synthetic Bone Graft
Mechanism of Action (MOA)	Osteoconduction	Osteoconduction	Osteoconduction	Osteoconduction
Pathway to US Market	US 510(k)	US 510(k)	US 510(k)	US 510(k)
Indications	Bone Void Filler	Bone Void Filler	Bone Void Filler	Bone Void Filler
Product Sizes (Graft Volume)	5.0cc 10cc 20cc	5.0cc 6.25cc 10cc 20cc 24cc	15cc	2.5cc 5.0cc 8.0cc 10cc 15cc
Ceramic Composition	15% Hydroxyapatite (HA)/ 85% β-TCP	100% β-TCP	100% β-TCP	Pure Hydroxyapatite (HA) Particles
Ceramic Distribution	Integrated	Integrated	Integrated	Coated
Resorption Rate*	Biphasic Composition Provides a Balance of Resorption Rate and Long-Term Stability for Fusion[1]	May Resorb Too Quickly for Long-Term Stability[2]	May Resorb Too Quickly for Long-Term Stability[2]	Ceramic Particulate May Resorb Too Quickly[3]
Porosity	87%	86.6%	82%	96.6%
Composition (By Mass)	97.5% Ceramic 2.5% Type I Bovine Collagen	80% Ceramic 20% Type I Bovine Collagen	80% Ceramic 20% Type I Bovine Collagen	29% Ceramic 71% Type I Bovine Collagen
Composition (By Volume)	12% Ceramic 0.7% Collagen	8.4% Ceramic 5.0% Collagen	11.3% Ceramic 6.7% Collagen	<0.5% Ceramic 2.9% Collagen
Compression Resistant**	Yes	Yes	Yes	No

Talking Points

- MASTERGRAFT® Matrix is available in kit sizes adaptable to a variety of labeled bone void filling applications including the spine, pelvis, ilium, and extremities.
- Ceramic composition balances resorption and long-term stability of scaffold.
  –Ceramic is replaced by new bone over time via creeping substitution.
- Readily absorbs bone marrow aspirate and allows for accurate delivery of included bone-forming cells to the site of implantation.
- MASTERGRAFT® Matrix is not intended to provide structural support. Supplemental fixation should be used to provide structural support when required.

Ceramic

1. Data on file.
2. Hing, et al. Comparative performance of three ceramic bone graft substitutes. *Spine.* 2007; 7:475–490.
3. Krajwattanapong C, et al. Comparison of Healos/bone marrow to Infuse (rhBMP-2/ACS) with a collagen-ceramic sponge bulking agent as graft substitutes for lumbar spine fusion. *Spine.* 2005; 30(9):1001–1007.

*Resorption rates may vary due to patient-specific differences and bone biology.

**NOTE: Compression resistance is necessary to preserve space for cell proliferation and growth. When space is preserved, bone-forming cells can produce a greater volume of bone over a larger area of space and ultimately produce larger fusion masses.

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Please see the package insert for the complete list of indications, warnings, precautions, and other medical information.

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