Competitor Fact Sheet: **Cerament®**

Biocomposites

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Feature	genex®	Cerament® Bonesupport®AB
Composition	Powder: 50% β-tricalcium phosphate, 50% $CaSO_4$ hemihydrate Mixing solution: Sterile water	Powder: 60% $CaSO_4$, 40% Hydroxyapatite (HA) Mixing solution: Liquid containing iohexol[6]
Contraindicated for infected sites	No[1]	Yes[5]
Available sizes	5cc, 10cc	5cc, 10cc, 18cc
Wait time before injection	No	3 minutes[7]
Setting time	15 minutes[1]	15 minutes[7]
Temperature sensitive setting	No[1]	No[6]
Drillable when fully set	Yes[1]	Yes[6]
Versatility	Moldable, packable, injectable[1]	3 bead sizes, Injectable, moldable[5, 6, 9]
Injection flexibility	• Luer Lock syringe with narrow plastic cannula included for hard-to-reach defects • OsteoPrecision™ Graft Delivery Device available to withstand insertion pressure	• Injection device with 2 tip extenders included
Impurities	No[1]	Unknown

Feature	genex®	Cerament® Bonesupport®AB
Claimed absorption rate	Up to 12 months[2]	6-12 months[6]
Fully absorbs	Yes[1]	No[1]
Dry compressive strength	15 MPa[1]	40-60 MPa[8]
Radiopaque	Yes[1]	Yes[6]
Exothermic	No[1]	No[6]
Key selling points and weaknesses	(+) Precisely balanced β-tricalcium phosphate/calcium sulfate hemihydrate[1] (+) Contains no HA or insoluble impurities[1] (+) Fully absorbed within 12 months[2] (+) Not contraindicated for use in infected sites[1] (+) No waiting period required before injection (+) Provides options for injection flexibility (+) Drillable when fully set[1] (+) Radiopaque[1] (+) Non-exothermic[1] (+) No precaution against use in articulating surfaces[1] (+) Negatively charged surface chemistry accelerates bone growth up to 5x normal levels[3] (+) Restores bone to normal trabecular structure in 36 weeks[4] (+) Comprehensive support network for our customers and hospitals	(+) Radiopaque during injection[6] (+) Drillable[6] (+) Non-exothermic[6] (+) Optional bead tray available for order[9] (-) Contains HA, which has a slow and incomplete absorption rate[1] (-) HA can cause a long-term nidus for infection[1] (-) Contraindicated for infected sites[5, 8] (-) Contraindicated for patients with a history of serious reaction to iodine based radio contrast agents (iohexol component)[5, 8] (-) Precaution to avoid intra-articular use[5] (-) Requires 3 minute wait time before injection * (+) = competitor selling points (-) = competitor weaknesses

References:

1. Biocomposites, Data on file.
2. Yang HL et al. Bone healing response to a synthetic calcium sulfate/beta-tricalcium phosphate graft material in a sheep vertebral body defect model. J Biomed Mater Res B Appl Biomater 2012;100B(7):1911–21.
3. Cooper, J.J., J.A. Hunt, and F. Pu, Enhancing the Osteogenic Potential of Bioabsorbable Implants through Control of Surface Charge., in Society for Biomaterials 2007 Annual Meeting. 2007: Chicago, Illinois, USA.
4. Sergey V. Dorozhkin. Calcium Orthophosphate-Based Bioceramics and Biocomposites. Published 2016 by Wiley – VCH Verlag GmbH & Co. KGaA
5. BONESUPPORT® AB Instructions for use CERAMENT™ Bone Void Filler – A 0210. Document No. IFU 0007-08 en 2014-06.
6. BONESUPPORT® AB CERAMENT™ Bone Void Filler Brochure. PR 0346-03 en US.
7. BONESUPPORT® AB CERAMENT™ Bone Void Filler Mixing Guide. PR 0647-01 en EU/US.
8. BONESUPPORT® AB CERAMENT™ Bone Void Filler Product Fact Sheet. PR 0649-01 en EU/US.
9. BONESUPPORT® AB CERAMENT™ Bone Void Filler Bead Tray Product Fact Sheet. PR 0836-01 en US.

For indications, contraindications, warnings and precautions see Instructions for Use.

Patents granted: EP 1390086 B1, US 8632796, CN ZL02809194.9, US 8496955

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