

# Flow -FX2™



## INJECTABLE BONE SUBSTITUTE MATERIAL

Flow-FX2™ is a calcium phosphate that addresses the need for strong, durable, osteoconductive materials with injectable characteristics for minimally invasive procedures.

### INJECTABLE

Flow-FX2 can be delivered through as small as a 16g needle and set hard at body temperature with an average compressive strength of 30 MPa<sup>1</sup>, 3 times the strength of cancellous bone.<sup>3</sup>

### SIMPLE MIXING

Flow-FX2 is mixed in a closed syringe to syringe mixing system which provides a simple technique that minimizes the chance of a spill.

### CELL MEDIATED REMODELING

X-ray diffraction shows nanocrystalline\* calcium phosphate is comparable to the mineral composition of human bone, providing a scaffold for new bone growth while undergoing normal cell mediated remodeling as the bone heals naturally



NATURAL BONE



Flow-FX2 BSM

\*The grain size of the hydroxyapatite (HA) crystals that form as part of the amorphous and crystalline mixture of calcium phosphate sets are on the nanometer scale. The size of crystalline structures were measured by x-ray diffraction to be less than 100 nanometers.





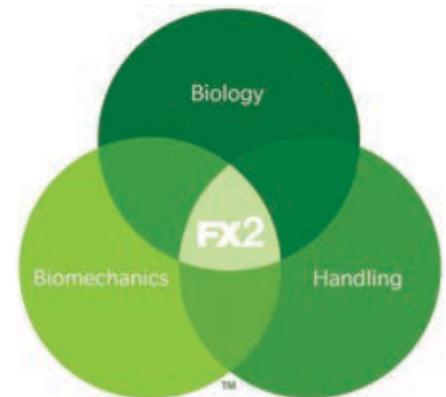
## Flow-FX™ 2

71-0025	Kit, 2.5 cc
71-0050	Kit, 5 cc



Be sure to mix thoroughly. For complete mixing instructions, refer to the instructions for use.

PERFORMANCE CRITERIA		
CRITERIA	FEATURE	BENEFIT
Mixing	Syringe to syringe	Closed mixing system - No Flow-FX2 loss
Formulation	Proprietary nanocrystalline* calcium phosphate	Comparable to chemical formulation of human bone
Handling	Injectable 20 g needle for orthopedic applications / 16 g needle included <sup>1</sup>	Minimally invasive delivery
Cohesive	Sets hard in a wet environment, may be irrigated after setting	Complete defect fill/resists wash out
Structure	Sets hard and maintains shape	Osteoconductive scaffold
Working Time	2 minutes	intraoperative flexibility
Setting Time	Sets in 3-5 minutes at 37°C	Maximizes surgical efficiency
Crystallization Process	Isothermic	Sets hard at body temperature
Compressive Strength	Average of 30 MPa <sup>1</sup>	Strength three times cancellous bone
Drillability	Drillable during and after setting <sup>4</sup>	Procedural flexibility
Remodeling	Natural cell mediated remodeling <sup>2</sup>	Uses and supports normal physiological healing
Sizes	2.5 cc and 5 cc	Accommodates a variety of applications



### References

1. Internal Testing Report TRE 071006
2. Tofighi, et al. New Generation of Synthetic, Bioresorbable and Injectable Calcium Phosphate Bone Substitute Materials: Alphabsm®, βBeta-bsmTM and γGamma-bsmTM Journal of Biomimetics, Biomaterials and Tissue Engineering Vol.2 (2009) pp 39-55.
3. Van Hvid, Peter Christensen, Jørgen Søndergaard, Peter Brøgger Christensen & Christian Grønhøj Larsen (1983) Compressive Strength of Tibial Cancellous Bone: Instron® and Osteopenetrometer Measurements in an Autopsy Material, Acta Orthopaedica Scandinavica, 54:6, 819-825, DOI: 10.3109/17453678308992915
4. Etex TRE 202\_144

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