



VIRTUOS[™] LYOGRAFT

SHELF-STABLE CELLULAR BONE ALLOGRAFT
SALES BROCHURE

VIRTUOS™ LYOGRAFT

SHELF-STABLE CELLULAR BONE ALLOGRAFT

FIRST-OF-ITS-KIND: LYOGRAFT

Virtuos™ Lyograft is a first-of-its-kind, cellular bone allograft that can be stored at room temperature rather than in a freezer. Developed by MTF Biologics, Virtuos Lyograft is prepared using a novel lyophilization technique designed to retain intact cells and inherent growth factors. This methodology maintains the key components of a cellular bone allograft while reducing the inconveniences associated with frozen storage and shortening preparation times by eliminating thawing steps.



A UNIQUE PROCESSING METHOD

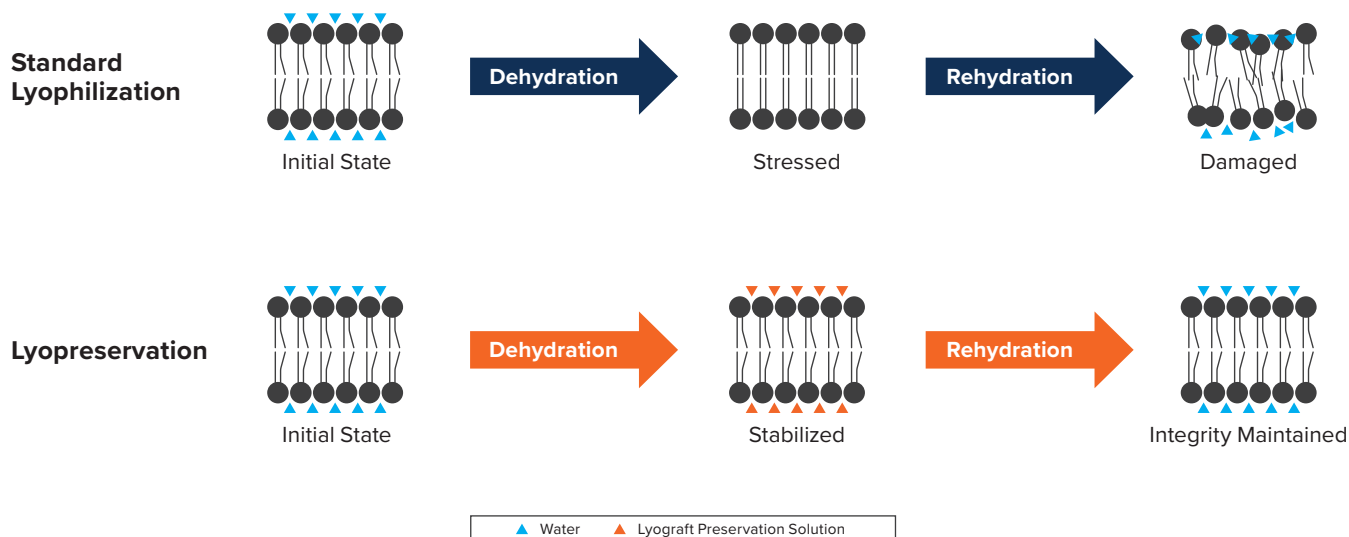
Designed to mimic the clinical performance of Trinity Elite™, Virtuos Lyograft is processed in the same time-sensitive manner using the same donor criteria and an identical bone composition.

≤24 hours ≤48 hours ≤72 hours ≤96 hours

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Recovery	Receipt of Tissue <ul style="list-style-type: none">• Stringent donor selection• VanGuard method for quantitative and qualitative assessment of bioburden	Processing <ul style="list-style-type: none">• Fresh, never frozen donors• Validated aseptic processing steps in clean room environment including bone cleaning, milling, and chemical processing	Cryopreservation for Trinity Elite <ul style="list-style-type: none">• Standard cryoprotectant• Controlled freezing rate of 1°C per minute• Initially stored in vapor phase liquid nitrogen at -185°C while at MTF <p>VS</p> Lyopreservation for Virtuos Lyograft <ul style="list-style-type: none">• Proprietary preservation solution• Novel lyophilization technique• Stored at room temperature (shelf-stable)

LYOPRESERVATION

Standard lyophilization is a widely used technique intended to preserve allograft tissues for long-term storage at room temperature. This technique rapidly freezes the tissue and then drives moisture out by allowing frozen water to evaporate. This typically generates freezing and drying stresses that can denature proteins and compromise cell integrity by irreversibly damaging cell membranes and intracellular components. Alternatively, the proprietary lyopreservation method developed by MTF minimizes stress formation during freeze-drying and prevents the degradation of cells.¹



ESSENTIAL BIOLOGICAL ELEMENTS



DBM Fibers

- Endogenous growth factors
 - » Including: BMP-2, BMP-6, BMP-7, IGF-1, VEGF, PDGF-BB
- Support bone remodeling and angiogenesis
- Lot tested for osteoinductive potential

Cancellous Chips

- Cellular component
 - » Mesenchymal stem cells
 - » Osteoprogenitor cells
 - » Other cells associated with bone formation
- Porous scaffold that acts as a natural osteoconductive matrix and allows cell ingrowth

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PRODUCT FEATURES



Moldable and cohesive cortical fibers provide osteoinductive potential



Cancellous chips contain intact cells and provide packability



Compatible with graft delivery systems

ORDERING INFORMATION

Virtuos™ Lyograft

Part Number	Size	Volume
440001	Small	1.2cc
440002	Medium	5.3cc
440003	Large	10.6cc
440004	Extra Large	16cc

Please visit Orthofix.com/IFU for full information on indications for use, contraindications, warnings, precautions, adverse reactions, information and sterilization.

Bone Marrow Aspiration Needle

Part Number	Size
21-5000	8 gauge
21-5011	11 gauge

O-Genesis™ Graft Delivery System

Part Number	Product Description
35-6000SP	Graft Delivery System
35-6001SP	Cannula and Caps

Reference:

1. Data on file with MTF Biologics

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