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SMALL BONE INNOVATIONS

Artelon®

CMC Spacer *

CHEMISTRY & MECHANICS

Contact:
Mike Dunn
Marketing Manager- Tissue Technologies
mdunn@totalsmallbone.com

Distributed by:
Small Bone Innovations, Inc.
1380 S. Pennsylvania Ave.
Morrisville, PA 19067
1-800-778-8837

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Artelon®

ARTELON, a unique patented biomaterial, is a degradable poly (urethane urea) that provides temporary support to healing tissue. ARTELON can be customized to meet specific end-use requirements. The design of the macrostructure is carefully tailored to e.g. fibers, highly porous scaffolds and films in order to provide the combination of surface, mechanical and biological functions necessary for the manufacture of new and improved products, which are able to help the body heal itself.

Chemistry

ARTELON is tailored to have a low elongation @ break compared to other poly(urethane urea) fibers and be long-term degradable. The green blocks in Figure 1 are based on a degradable polyester, polycaprolactone diol. As ARTELON is an entirely synthetic material, it is not associated with risk for disease transmission. In addition to that, the polymer does not vary between batches as materials of animal or human donor origin often do.

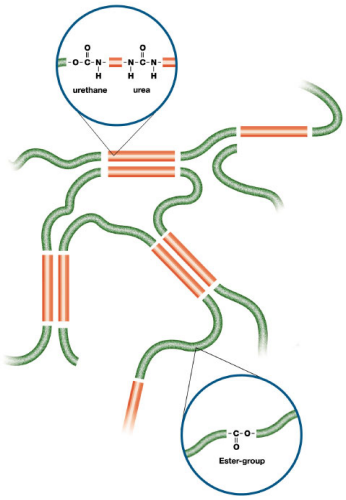

Figure 1. Schematic picture of an ester- based poly(urethane urea)

Mechanical properties

ARTELON fiber is developed for ligament and tendon repair and can be tailored to high performance structures from woven, knitted and braided processes.
ARTELON fibers have an ultimate stress of >240 MPa. Both stiffness and ultimate load increase with strain rate like e.g. ligaments and tendons, which are known to be strain rate stiffening. The fibers have excellent elasticity i.e. returns to its original length after being stretched.

Surface properties

ARTELON scaffold has soft and shapeable characteristics combined with high porosity ~90%. The scaffold acts as a wick, which enhances its ability to soak and hold e.g. blood or bone marrow and maintains its space keeping and original shape when wet.

Artimplant
Degradable Materials for Optimal Tissue Repair

Hulda Mellgrens Gata 5
SE-421 32 Västra Frölunda
SWEDEN

Phone +46 31 746 56 00
Fax +46 31 746 56 60
www.artimplant.com