Resomer®

Bioresorbable polymers for advanced medical textile processing

Standard and custom solutions from a biomaterials leader

Creating high-quality and high-performance medical textiles requires specially developed superior raw materials. Our RESOMER® bioresorbable polymers can be used to produce the mono-filaments and multi-filaments that form the basis of a broad range of medical textiles from yarns and tapes to meshes and barbed sutures. The RESOMER® polymers can be precisely tailored to match the requirements of the target application both in terms of mechanical properties, like tensile strength or elasticity, and degradation rates.

Evonik is a leader in biomaterials in all applications for bioresorbable implants. By leveraging 30 years of safety and biocompatibility of RESOMER®, we offer a broad, reliable and flexible portfolio of biomaterials combined with advanced processing know-how. Our customized approach is particularly suitable for the development of specialty fibers.

EVONIK
Leading Beyond Chemistry

BENEFITS OF RESOMER® FOR TEXTILE-BASED MEDICAL DEVICES

- ISO 13485 quality
- Highest quality mechanical and chemical properties
- Colorless and violet options available for each type
- Prototyping and development services for customized yarns and textiles
- Degradation versatility from less than four weeks to around two months
- Optimized for melt processing
- Reduced processing steps for block copolymers by eliminating the need for additives (e. g. plasticizer)

OVERVIEW OF RESOMER® PLATFORM FOR TEXTILE APPLICATIONS

OPTIMIZED FOR MULTI-FILAMENTS

- Homopolymers and copolymers
- High tensile strength
- Rigid at body temperature

RESOMER® G 205 S
PGA/Poly(glycolide)

- Degradation < 5 weeks
- Tg 41 °C
- IV [dL/g] 1.05–1.25

RESOMER® GL 903 S
PGLA/Poly(glycolide-co-L-lactide)

- Monomer ratio 90:10
- Degradation < 5 weeks
- Tg 42 °C
- IV [dL/g] 1.05–1.25

OPTIMIZED FOR MONO-FILAMENTS

- ABA-block-copolymer with amorphous mid-block
- Low bending stiffness, elasticity
- Slow crystallization rate

RESOMER® GT 643 S
PGA-TMC/Poly(glycolide-co-trimethylene carbonate)

- Monomer ratio 64:36
- Degradation < 8 weeks
- Tg 19 °C
- IV [dL/g] 1.00–1.40

RESOMER® GC 753 S
PGA-CL/Poly(glycolide-co-caprolactone)

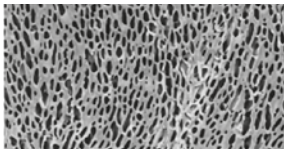
- Monomer ratio 75:25
- Degradation < 4 weeks
- Tg –12 °C
- IV [dL/g] 1.15–1.55

APPLICATION AREAS

Sutures, barbed sutures and thread lifts
- Strength
- Reduced inflammation
- Adapted degradation profile
- Flexibillity/Pliability

Mesh and tapes
- Strength
- Adapted degradation profile
- Partly absorbable in conbination with PP/PET
- Minimization of tissue-irritation

Mono- and multi-filament yarns
- Strength
- Adapted elasticity and degradation profile
- Excellent textile processability



Membranes and non-wovens (e. g. tissue regeneration)
- Simulation of wound-healing and cell-seeding
- Different pore sizes and filament fineness
- Easy to drape onto complex tissues or body shapes

Evonik Operations GmbH
Health Care Business Line
Drug Delivery & Medical Device Solutions

healthcare@evonik.com
evonik.com/healthcare

202110

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