

Polyglycolic Acid Sutures | PGA-Sutures



PGA-Suture for surgical application

Main features and benefits of PGA-Sutures:

- ITVP produces PGA-Sutures according ISO 13485-2016 and meets all requirements established by the United States Pharmacopoeia (USP) and the European Pharmacopoeia (EP) for Synthetic Absorbable Surgical Sutures
- ITVP produces the monomer glycolide itself in highest purity (REACH registered)
- PGA Surgical Sutures produced by ITVP are coated with an absorbable block copolymer consisting of ϵ -caprolactone, trimethylene carbonate and glycolide
- Short- to mid-term absorbable suture
- Smooth knot run down behavior
- High knot security
- High linear and knot pull tensile strength

Coated, braided PGA is an excellent and well established synthetic absorbable suture, widely used for surgical applications. PGA's remarkable characteristics are outstanding tensile strength, predictable absorption time, proven biocompatibility, pleasant handling properties and excellent knot security. PGA-Sutures are indicated for use in common soft tissue approximation including ophthalmic surgery, but not for cardiovascular and neurological tissue.

PGA-Sutures
Short- to mid-term absorbable
Braided structure
Violet, Undyed
Polyglycolic Acid
Coated or uncoated (USP 10/0, 9/0)
Mass absorption after 60–90 days
Tensile strength retention: 14 days: 60–70% / 21 days: 24–42%

ITVP produces the monomer glycolide and absorbable PGA polymer as well as PGA-based yarns and braids for medical surgical applications (sutures, ligaments, meshes etc.). Absorbable polymers, yarns and braids are available either uncolored or in violet (D&C violet No. 2).

PGA-Sutures are synthetic short- to mid-term absorbable surgical sutures of PGA homopolymer and coated with an optimized copolymer to allow a smooth passage through tissues with minimal tissue drag.

PGA-Sutures have been found to be non-antigenic, non-pyrogenic and elicit only mild tissue reactivity during the absorption process. Absorption of PGA-Suture occurs by hydrolysis; beginning with loss of tensile strength followed by loss of mass. The absorption times for PGA-Sutures is 60 to 90 days. PGA-Sutures retain approximately 70% of its initial strength after two weeks. They are available uncolored or violet dyed from USP size 10/0 to USP size 6. USP 9/0 and 10/0 have monofilament structure, all other sizes are braided from multifilament yarns.

USP Size	EP Metric	Diameter		Color Content	Coating	Knot Pull Tensile Strength (KPTS)	
						Original	Degradation Test 14d**
		[mm]		[%]	[%]	[N]	[N]
		X_{\min}	X_{\max}	$X_{i \max}$	$X_{\min} - X_{\max}$	$X_{i \min}$	$X_{i \min}$
10/0	0.2	0.020	0.029	0.10	--	*0.70	*0.30 ⁺
9/0	0.3	0.030	0.044	0.10	--	*1.20	*0.95 ⁺
8/0	0.4	0.040	0.049	0.10	0.70 – 2.6	1.00	0.54
7/0	0.5	0.050	0.069	0.10	0.70–2.6	1.50	0.80
6/0	0.7	0.070	0.099	0.10	0.70–2.6	3.5	1.5
5/0	1	0.100	0.149	0.10	0.70–2.6	7.5	4.0
4/0	1.5	0.150	0.209	0.10	0.70–2.6	13.0	9.0
3/0	2	0.200	0.259	0.10	0.70–2.6	20.0	13.2
2/0	3	0.300	0.349	0.10	0.70–2.6	36.0	22.1
0	3.5	0.350	0.409	0.10	0.70–2.6	46.0	28.5
1	4	0.400	0.509	0.10	0.70–2.6	65.0	42.0
2	5	0.500	0.599	0.10	0.70–2.6	85.0	56.9
3+4	6	0.600	0.699	0.10	0.70–2.6	105.0	71.6
5	7	0.700	0.799	0.10	0.70–2.6	125.0	86.3
6	8	0.800	0.899	0.10	0.70–2.6	145.0	101.0

*Linear tensile strength, monofilaments; **NaCl 0.9, T=37°C, t= 14 days; ⁺Linear tensile strength after 7 days degradation; X_{\min} = minimum average value, X_{\max} = maximum average value, $X_{i \min}$ = minimum individual value, $X_{i \max}$ = maximum individual value.

ITV Denkendorf Produktservice GmbH (ITVP) is a subsidiary of the DITF (German Institutes of Textile and Fiber Research Denkendorf). ITVP is certified according ISO 13485 for the development and production of polymers, pre-products and devices for medical applications, but is not actively marketing medical devices for the final

consumer. The main focus lies on textile-based implants like e.g. surgical sutures and ligaments for wound treatment, meshes for hernia operations, vascular prostheses for blood vessel replacement, stents for use in the trachea and oesophagus, and membranes for treatment of burns.

ITV Denkendorf Produktservice GmbH

Contact: Dr. rer. nat. Sven Oberhoffner
T +49 (0)711 93 40-163
sven.oberhoffner@itvp-denkendorf.de

ITVP CEO: Prof. Dr.-Ing. Götz T. Gresser
T +49 (0)711 93 40-216
goetz.gresser@itvp-denkendorf.de

Koerschtalstraße 26 | D-73770 Denkendorf
www.itvp-denkendorf.de



Accredited laboratory by DAKKS according to DIN EN ISO/IEC 17025. The accreditation is valid only for the scope listed in the annex of the accreditation certificates D-PL-17474-01-00 respectively D-PL-17474-01-02.