

Reliability and precision - our suture materials

NON-ABSORBABLE

Surgical
sutures

Convincing
down to the
smallest detail

150
YEARS
1866 - 2016



SERAG
WIESSNER





High-tech and hand-crafted

Decades of experience and state-of-the-art production technology

Reliability and precision

Wide range of top-quality suture materials

As the oldest German manufacturer of surgical suture material, SERAG-WIESSNER uniquely combines decades of experience with the latest medical know-how. It is 150 years since the company began manufacturing sterile catgut.

The manufacture of surgical suture material is characterised by the contrast between state-of-the-art production technology and a large number of manual production processes. At SERAG-WIESSNER, we manufacture and sterilise needle-suture combinations in our cleanrooms using computer-controlled automated equipment. At the same time, many of the production steps require the sensitive and reliable manual skills of our highly experienced workers. To ensure consistently high quality, we maintain a certified quality management system in accordance with

the international standards DIN EN ISO 13485.





Raw materials

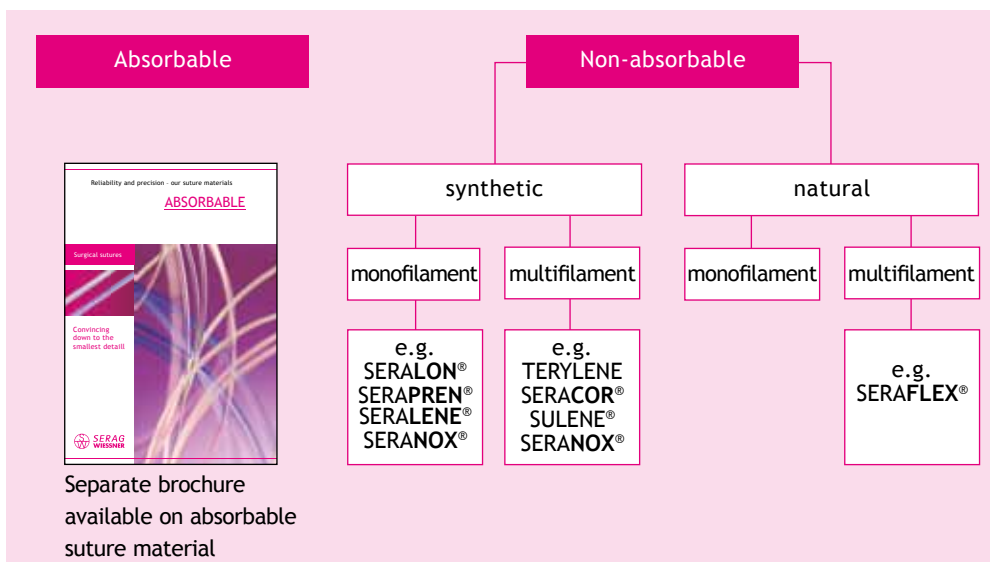
Suture material can be classified according to whether it is of natural or synthetic origin.

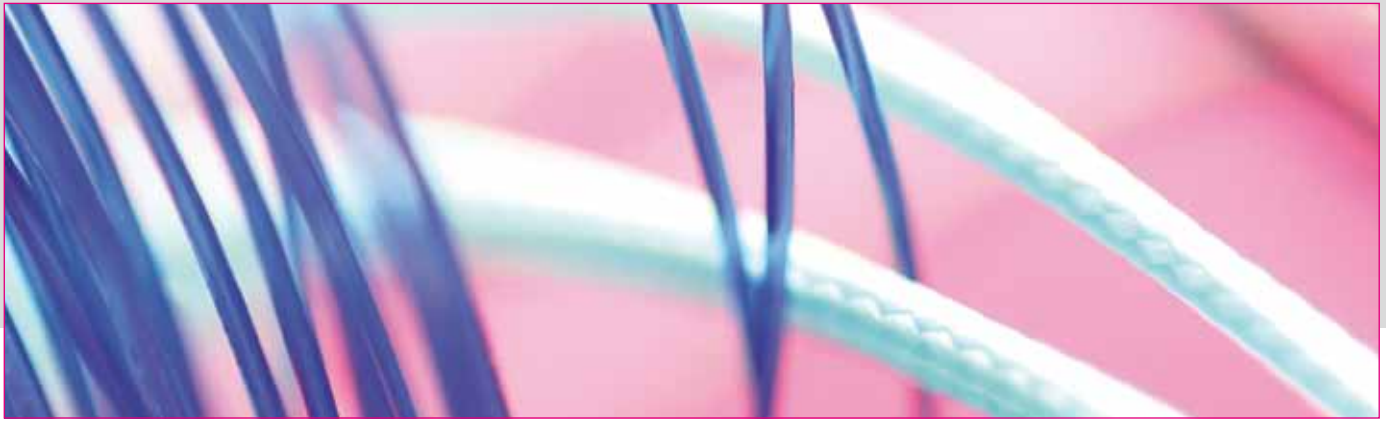
Natural suture materials include silk. The other group consists of synthetically produced polymers such as threads made of polyamides, polyolefins and polyester. Absorbable polymers made from polyglycolic acids also belong in this group.

Absorbability

An important characteristic for classifying sutures is whether or not they are absorbable. Absorbability is the desired and deliberate dissolution of the thread in human or animal tissues. There are both absorbable and non-absorbable materials, although it has to be remembered that even non-absorbable sutures such as silk and polyamide may disintegrate in the tissues after a long period of time.

Raw materials





Thread structure



Monofilament

Multifilament with coating

Braided multifilament

Coated, braided multifilament

Twisted multifilament

Monofilament sutures

Monofilament threads of synthetic materials are obtained by a special melt spinning process. The molten synthetic is thereby extruded through very fine spinning nozzles or spinnerets under high pressure. Monofilament sutures are preferably used in smaller sizes, since the wiriness, which is found in all monofilament threads, causes the handling to become progressively more difficult as the thread increases in thickness. In particular, it is less easy to knot. Monofilament sutures are relatively sensitive to external damage, e.g. when grasping the thread with instruments. The smooth closed surface, as well as the completely closed interior, prevents any capillary action in the monofilament fibres. At the same time, they slide the most smoothly through the tissues.

Multifilament sutures

Multifilament or polyfilament threads are made up of many thin individual filaments. These can be twisted or braided. The diameter of all twisted threads varies greatly and their surface tends to be rough. The longitudinal direction of the individual fibres results in relatively high capillarity. The individual filaments in a braided suture lie more or less transversely to its longitudinal axis, which means that braided sutures have less capillary action than twisted threads. Multifilament sutures have a rough surface that affects their passage through the tissues. On the other hand, they have considerably better knot-holding security.

Multifilament sutures are usually coated. This coating makes the irregular surface of the thread smooth, so that it passes through the tissues more easily.



Knot holding remains secure and the sutures are less stiff than monofilament sutures. In addition, the coating reduces capillarity.

Suture sizes

Besides the raw materials and thread structure, the suture size significantly contributes to determining the tensile strength and knotting properties of a surgical suture. Suture sizes are therefore strictly regulated. Within the jurisdiction of the European Pharmacopoeia (EP), the decimal system is used. The diameter is metric and gives the suture size in 0.1 mm. Although the EP system is more rational, the United States Pharmacopoeia (USP) classification is more often used in practice.

Suture classification

EP (metric)	USP	Ø in mm
0.01	12-0	0.001-0.004
0.05	-	0.005-0.009
0.1	11-0	0.010-0.019
0.2	10-0	0.020-0.029
0.3	9-0	0.030-0.039
0.4	8-0	0.040-0.049
0.5	7-0	0.050-0.069
0.7	6-0	0.070-0.099
1	5-0	0.100-0.149
1.5	4-0	0.150-0.199
2	3-0	0.200-0.249
2.5	-	0.250-0.299
3	2-0	0.300-0.349
3.5	0	0.350-0.399
4	1	0.400-0.499
5	2	0.500-0.599
6	3+4	0.600-0.699
7	5	0.700-0.799
8	6	0.800-0.899
9	7	0.900-0.999
10	8	1.000-1.099
-	9	1.200-1.199
-	10	1.200-1.299

Suture sizes and classification



Atraumatic needles

Atraumatic suture material is understood to mean needle-suture combinations in which the thread is firmly attached (swaged) to the needle, thus minimising tissue trauma. We offer a wide range of atraumatic needles for these needle-suture combinations. They are made of 300 series stainless steel, which has a high resistance to bending, excellent penetrating qualities, and exceptional breaking strength (ductility) - all qualities that allow the surgeon to work easily and safely. The designation of our atraumatic needles uses a combination of letters and numbers as recommended by the Technical Committee of the Association of Surgical Suture Manufacturers.



● Round-bodied needle, with standard point



⊕ Round-bodied needle, with trocar point





▼ Reverse cutting needle



▽ Reverse cutting needle with special point



SERATAN® is a new generation of suture material, based on plasma technology. Very fine polyamide threads are coated with titanium. The metallic coating is about a thousand times thinner than a human hair, which means that the titanium moves absolutely together with the suture thread. From practical experience, we know today that almost no granulation tissue forms with healing around titanium implants in the body.

Material	 POLYAMID titanised
Symbol	 undyed, monofilament, titanised
Size	USP 6/0 to 2/0 EP 0,7 to 3
Absorption profile	non-absorbable
Available combinations	Needled DQL Single sutures
Uses	Cosmetic-plastic surgery / Reconstructive surgery and after burn injuries

SERATAN®

Titanium coating promotes more rapid wound healing

The best cosmetic results

Logical alternative for hypertrophic scars

SERALON®

Best skin sutures




Extremely smooth passage through tissues

Very high linear and knot tensile strength with finer sutures

Very easy handling

Economical cassette packs

SERALON® is a polyamide thread that is extremely soft and pliable compared with conventional monofilament sutures.

Material	 POLYAMID
Symbol	 undyed (SERALON®), monofilament or  blue (SERALON®), black (NYLON) monofilament
Size	SERALON® USP 7/0 to 3+4 blue EP 0,5 to 6 SERALON® USP 5/0 to 2 undyed EP 1 to 3
Absorption profile	non-absorbable
Available combinations	Unneeded : Single sutures / multipacks / cassette packs Needed : DR / DRM / DRT / DS / DSL / DSS / DSX / GR / GS / HR / HRT / HRX / HS / HSL / KS Single sutures / multipacks
Uses	Ligatures / general surgery / orthopaedics / plastic surgery



At sizes larger than 4-0, SUPRAMID has a multifilament character. It consists of twisted polyamide fibres that are coated. SUPRAMID has high tensile strength, good knotting properties and the advantages of a monofilament thread. In smaller diameters, 7-0, 6-0, and 5-0, SUPRAMID is monofilament.

SUPRAMID

Exceptional
knot-holding security

Extremely smooth
passage through tissues

High linear and knot
tensile strength

Economical cassette
packs

Material	 POLYAMID
Symbol	 undyed, multifilament (twisted, coated) or  black, multifilament, (twisted, coated) USP 5/0 and finer:  or 
Size	black: USP 6/0 to 3+4 EP 0,7 to 6 undyed: USP 5/0 to 6 EP 1 to 8
Absorption profile	non-absorbable
Available combinations	Unneeded: Single sutures / multipacks / cassette packs Needed: DS / DSS / GS / GR / HR / HRT / HS / VSP Single sutures / multipacks
Uses	Ligatures / general surgery / oral and maxillofacial surgery / skin closure

NYLON

Extremely smooth
passage through
tissues

Very easy handling

NYLON is a monofilament polyamide suture. Thanks to its easy passage through the tissues and high tensile strength, it is particularly suitable for microsurgery where the most delicate stitches are required.

Material  POLYAMID

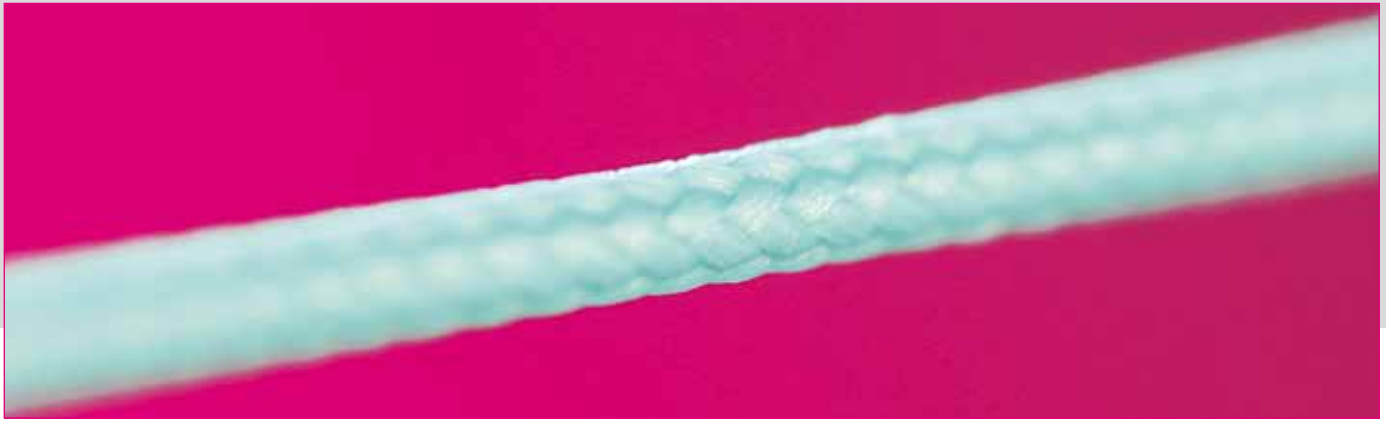
Symbol  black, monofilament

Size USP 11/0 to 8/0
EP 0,1 to 0,4

**Absorption
profile** non-absorbable



**Available
combinations** Needed: DR / DRM / DRT / DS / DSL / DSLA / DSS / DSX / GR /
GS / HR / HRT / HRX / HS / HSL / KS
Single sutures / multipacks

Uses Plastic surgery / Neurosurgery / Eye surgery



SULENE® differs from TERYLENE in that it has a special coating that markedly reduces the sawing effect, which is always present with braided sutures, and reduces capillarity to a minimum.

SULENE®

Material	 POLYESTER
Symbol	 green, multifilament (braided), coated
Size	USP 6/0 to 5 EP 0,7 to 7
Absorption profile	non-absorbable
Available combinations	Unneeded: Single sutures / multipacks / cassette packs Needed: DR / DRT / DS / DSS / FRX / GR / GS / HR / HRT / HRX / HS / KS Single sutures / multipacks
Uses	Ligatures / holding sutures / marking / MIS / universal use

Universal sutures

Optimal passage through the tissues

Very high linear and knot tensile strength

Economical cassette packs

TERYLENE

Universal sutures

Exceptional passage through the tissues

Very high linear and knot tensile strength

Very easy handling



Economical cassette packs

TERYLENE is a non-absorbable suture material that has proved its worth in all fields of use over the past decades. Its high tensile strength is a particularly positive characteristic.

Material

 POLYESTER

Symbol

 undyed, multifilament (braided), coated or
 green, multifilament (braided), coated

Size

green: USP 6/0 to 5
 EP 0,7 to 7

undyed: USP 5/0 to 8
 EP 1 to 10

Absorption profile

non-absorbable

Available combinations

Unneeded: Single sutures / multipacks / cassette packs
 Needed: DR / DRT / DS / DSS / FRX / GR / GS / HR / HRT / HRX / HS / KS / VSP
 Single sutures / multipacks

Uses

Ligatures / holding sutures / marking / universal use






This reliable braided polyester suture was developed especially for cardiac surgery. SERACOR® is a braided polyester suture, which meets all the requirements in this field, thanks to its structure and coating. The material is also biochemically and physiologically inert, which means that it is stable in the long term and is extremely well tolerated by the tissues.

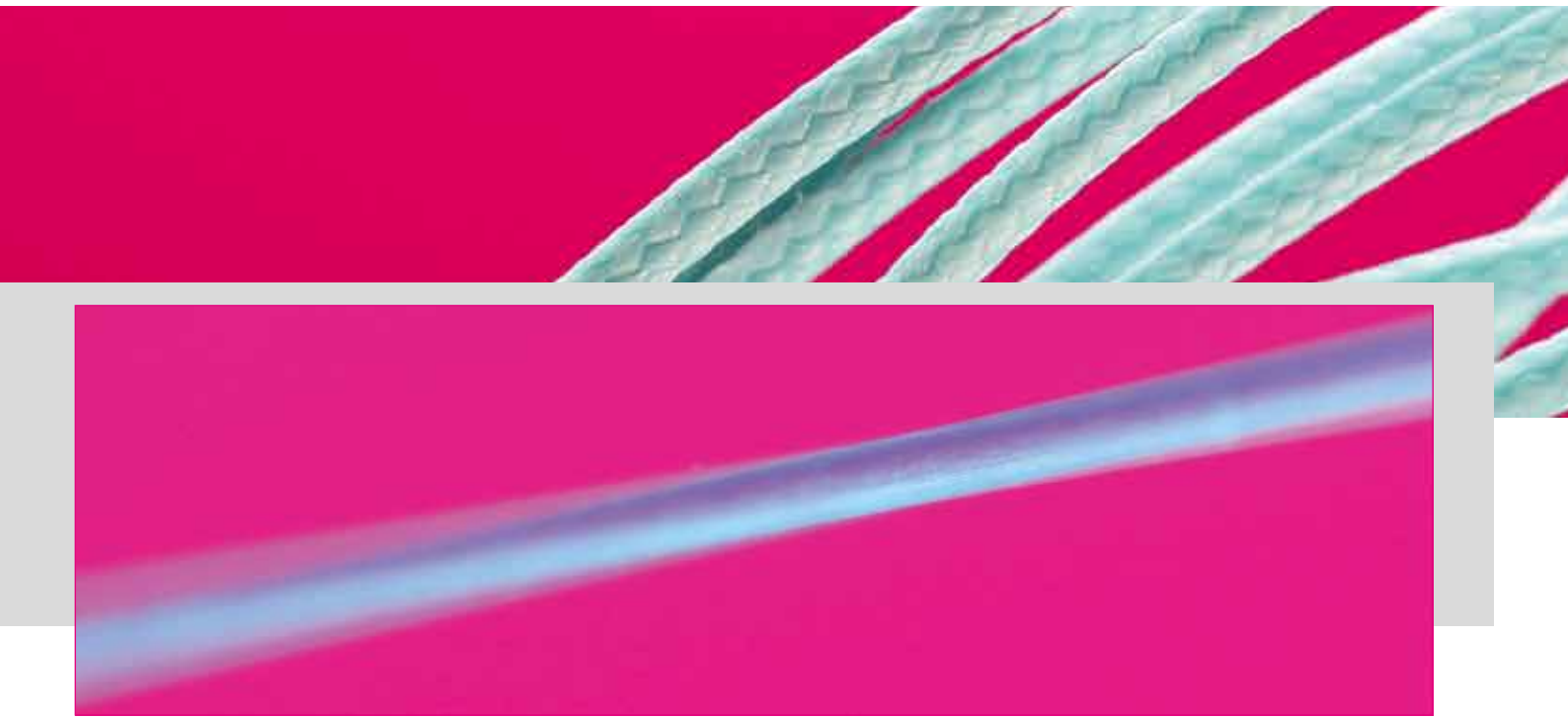
SERACOR®

Special sutures for cardiac surgery

Oval pledgets for easy, secure suture placement

Exceptionally well tolerated by the tissues

Material	 POLYESTER
Symbol	 undyed, multifilament (braided), coated or  green, multifilament (braided), coated
Size	undyed: USP 6/0 to 0 EP 0,7 to 3,5 green: USP 6/0 to 1 EP 0,7 to 4
Absorption profile	non-absorbable
Available combinations	Needed: DRT / HR / HRT / Single sutures / multipacks with and without pledgets
Uses	Cardiac surgery, Special heart valve sutures, also for paediatric cardiac surgery with small pledgets



SERAPREN®

SERAPREN® is a non-absorbable monofilament polypropylene thread. It is the tried and tested standard suture material in vascular surgery.

Best results for skin closure

Material  POLYPROPYLEN

Very high tensile strength

Symbol  blue, monofilament

Knot-holding security

Size USP 8/0 to 1
EP 0,4 to 4

Exceptionally well tolerated by the tissues

Absorption profile non-absorbable


Minimal memory effects thanks to the long pack

Available combinations
Needled: DR / DRM / DRT / DS / DSL / DSS / HR / HRT / HRX
Single sutures / multipacks / long pack / intracutaneous sutures

Uses Ligatures / vascular surgery / microsurgery / orthopaedics / plastic surgery



SERAMON® is made entirely of polytetrafluoroethylene (PTFE). This fully fluorinated polymer is characterised by a very low coefficient of friction, i.e. the material slides very well compared to other materials and remains inert in the body.

Material	PTFE POLYTETRAFLUORIDETHYLENE	
Symbol	 undyed, monofilament	
Size	USP 7/0 to 2/0 EP 0,5 to 3	
Absorption profile	non-absorbable - inert	
Available combinations	Needled	DR, DRT, DS, DSS, HR, HRT, HS single sutures with and without pledgets Chordae Loops for heart valve reconstruction
Uses	vascular surgery / cardiac surgery / oral and maxillofacial surgery	

SERAMON®

Optimal handling

Very low coefficient of friction = Extremely smooth passage through tissue

Particularly low tissue reactivity

Biologically inert

Anti-adhesive

Minimal memory

High knot tensile strength



SERALENE®

Sustained tensile strength

Knot-holding security

Almost no memory effects after stretching

Best results in vascular surgery

SERALENE® is a non-absorbable suture developed especially for vascular surgery, since its smooth pore-free surface ensures that it passes optimally through the tissue. PVDF is related to PTFE. In comparison with polypropylene, SERALENE® has much greater durability, i.e. the material remains unchanged in the body for a longer period. This ensures long-term stability of the stitches.

Material  POLYVINYLIDENE FLOURIDE

Symbol  blue, monofilament

Size USP 8/0 to 2
EP 0,4 to 5

Absorption profile non-absorbable

Available combinations Needed: DR / DRM / DRT / DRTA / DSS / GR / GS / HR / HRT / HRX / HS / KS
Single sutures / multipacks / Award-winning long pack

Uses Ligatures / vascular surgery / microsurgery / plastic surgery



The raw material used is the fine thread from silkworm cocoons. The raw silk threads are specially braided and coated to make them water-repellent and resistant to serous secretions. Silk is a non-absorbable suture material of natural origin which has been used effectively in surgical procedures for centuries.

SERAFLEX®

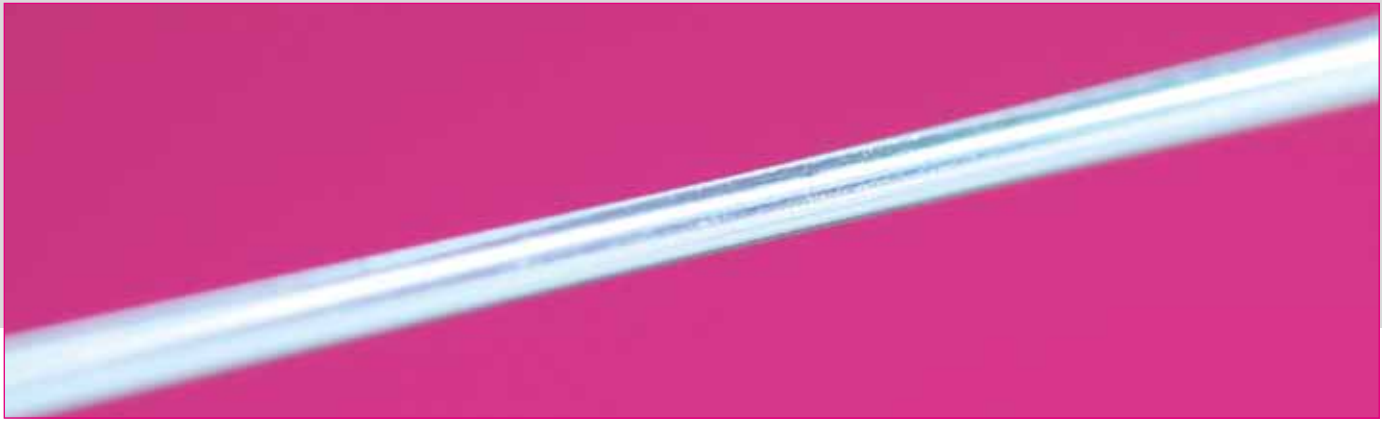
Knot-holding security

Exceptional passage through the tissues

Very easy handling

Economical cassette packs

Material	 Silk
Symbol	 undyed, multifilament (braided), coated or  black, multifilament (braided), coated
Size	black: USP 7/0 to 5 EP 0,5 to 7 undyed: USP 4/0 to 5 EP 1,5 to 7
Absorption profile	non-absorbable
Available combinations	Unneeded: Single sutures / multipacks / cassette packs Needed: DR / DRT / DS / DSS / DSX / GR / GS / HR / HRT / HRX / HS / HSM / KS / VSP Single sutures / multipacks
Uses	Ligatures / holding sutures / marking / oral and maxillofacial surgery / ophthalmology



SERANOX®


SERANOX® is a non-absorbable suture material characterised by very high tensile strength and an ability to induce very little tissue reaction. The raw material is absolutely non-corroding stainless steel.

Greatest tensile strength




Various accessories available

With special laser-swaged needles for closing the sternum

Material

 STEEL

Fadensymbol

 multifilament, twisted or
 multifilament, twisted, coated or
 monofilament

Size

USP 5/0 to 6
EP 1 to 8

Absorption profile

non-absorbable

Available combinations

Unneeded: Single sutures / multipacks
Needed: DS / GR / GS / HRK / HRT / HS /
Single sutures / multipacks / long packs
Special combinations for trauma surgery and cardiac surgery

Uses

Cardiac surgery (sternum) / orthopaedics / trauma surgery



This innovative method of coating the sternal wire with titanium has the effect of accelerating the healing process. Furthermore, titanium has proven itself to be a particularly well-tolerated material in the field of medicine. At the same time, the outstanding mechanical properties of steel wire are retained.

Material  Titanium-coated steel

Fadensymbol  monofilament, coated (titanium nitride)

Size USP 5 to 7
EP 7 to 9

Absorption profile non-absorbable

Available combinations Needled: HRK
Single sutures / multipacks

Uses Cardiac surgery (sternum)

SERANOX® TI

Titanium coating - for more rapid healing

Better tissue tolerability

Sure handling thanks to smooth sliding


Minimised fracture behaviour with twisting


Laser swaging ensures a stable hold and sure needle control even with high bending stress

150
YEARS
1866 - 2016





SERAG-WIESSNER GmbH & Co. KG
Zum Kugelfang 8 - 12
95119 Naila/Germany


 + 49 9282 937-0


 + 49 9282 937-9369

Export Department:

 + 49 9282 937-230

 + 49 9282 937-9785

 info@serag-wiessner.de

 www.serag-wiessner.de