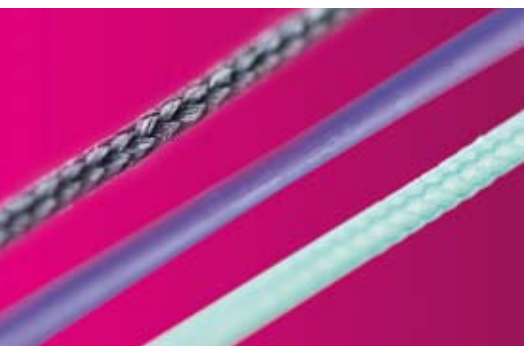


Reliability and precision - our suture materials

NON-ABSORBABLE

Surgical sutures



Convincing
down to the
smallest detail



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 nearly 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.

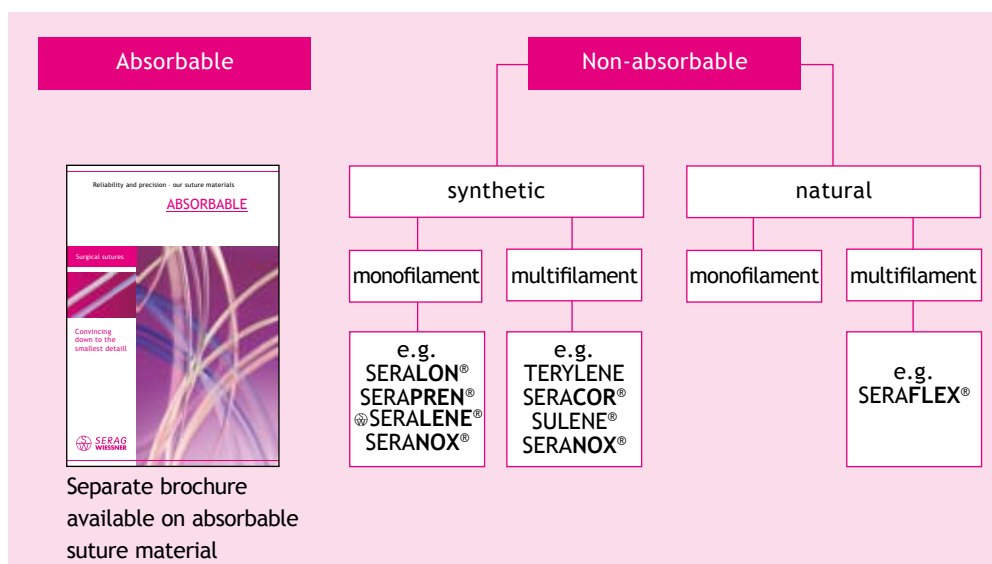
Natural suture materials include silk.

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



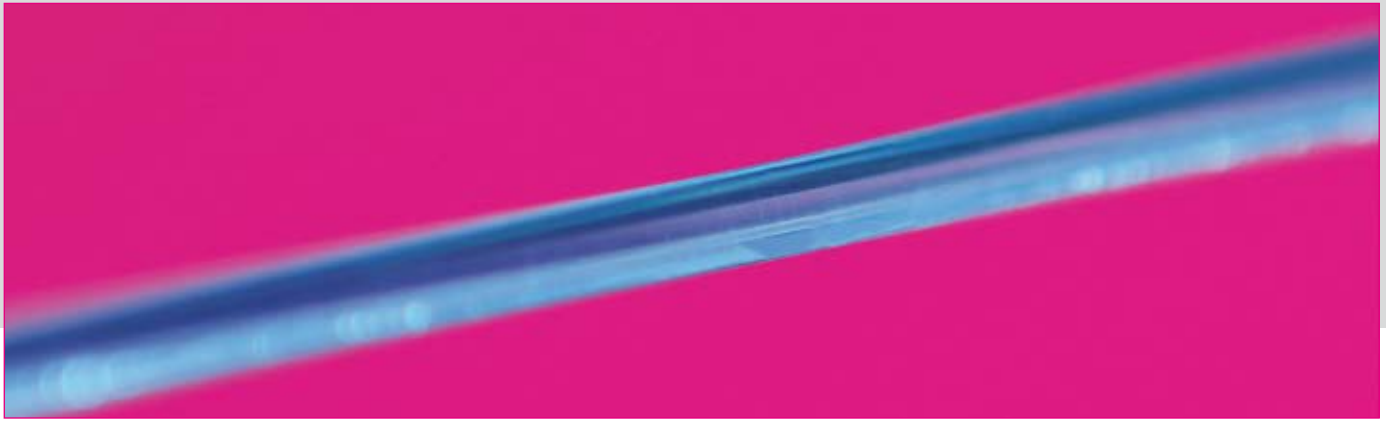
⊕ Round-bodied needle, with trocar point



▼ Reverse cutting needle



▽ Reverse cutting needle with special point





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

SERALON®/NYLON

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

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

Absorption profile non-absorbable

Available

Unneeded : Single sutures / multipacks / cassette packs

combinations

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

Best skin sutures

Extremely smooth
 passage through
 tissues

Very high linear and
 knot tensile strength
 with finer sutures

Very easy handling

Economical cassette
 packs

SUPRAMID

Exceptional
knot-holding security

Extremely smooth
passage through tissues

High linear and knot
tensile strength





Economical cassette
packs

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.

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



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

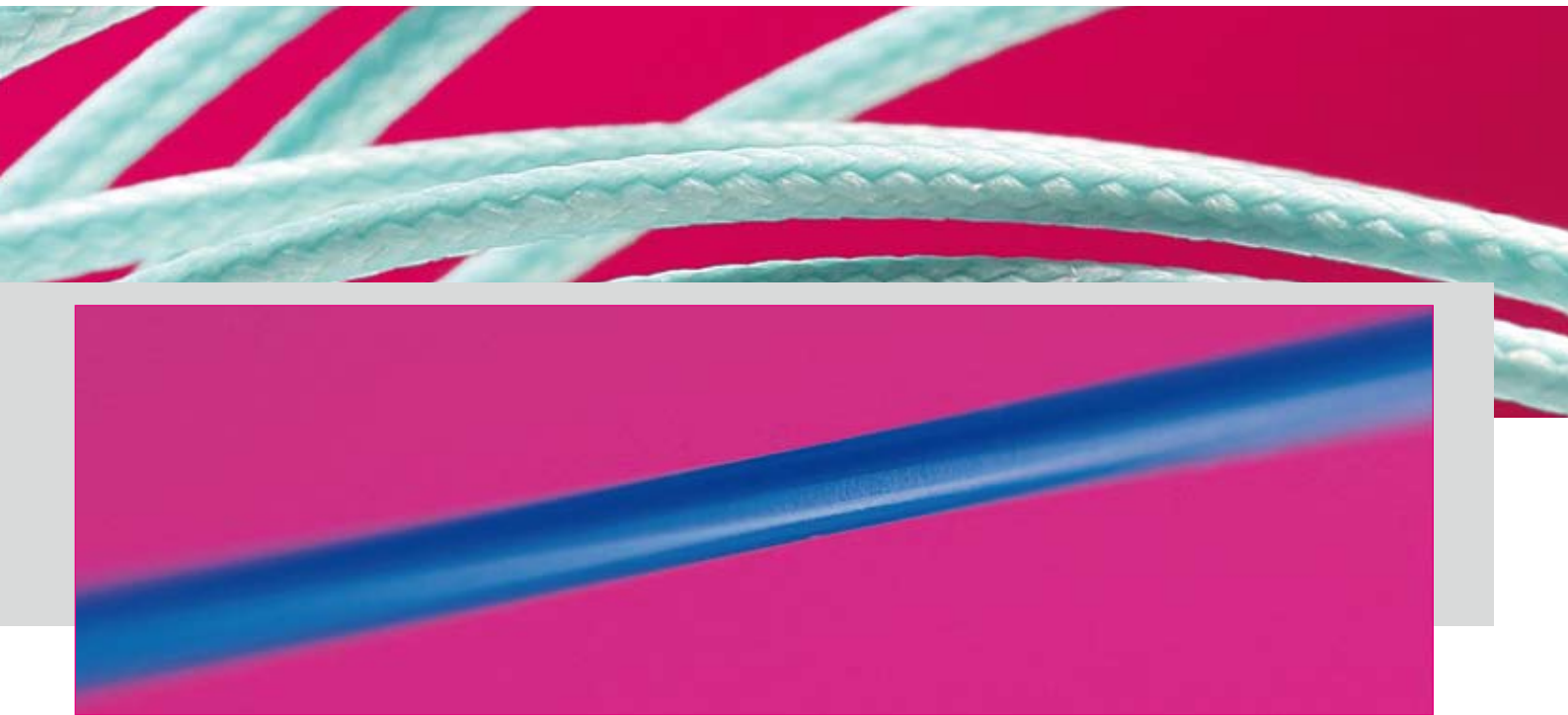
Exceptionally well tolerated by the tissues

Absorption profile non-absorbable



Minimal memory effects thanks to the long pack

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

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



Sustained tensile strength

Knot-holding security

Almost no memory effects after stretching

Best results in vascular surgery



SERAFLEX®

Knot-holding security


Exceptional passage through the tissues

Very easy handling



Economical cassette packs

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.

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

Unneeded: Single sutures / multipacks / cassette packs

combinations

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® 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.

SERANOX®

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


Greatest tensile strength


Various accessories available

With special laser-swaged needles for closing the sternum





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