



Surgical Sutures & Meshes

State of the art



When experience matters

Our surgical sutures are manufactured in line with state of the art technology. Each individual production process is subject to strict scientific quality control.

Continuous inspection of both mechanical and microbiological characteristics is given top priority.

We have more than 85 years of experience in manufacturing surgical sutures.

Our team understands the specific needs of medical professionals by providing them with access to the most complete portfolio of surgical sutures.

The result is the current modern product range of absorbable and non-absorbable sutures, which consists of more than 1500 individual surgical suture products.

Production takes place in accordance with GMP guidelines, and a comprehensive quality management system in line with ISO 13485 has been implemented.

All products have been CE marked since 1999.



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Surgical Sutures - Colour coding



Chirlac rapid braided



Chirasorb braided



Chirlac braided



Polydiox monofilament

Silk braided

Tervalon braided

Chiralen monofilament

Silon braided/
Orsilon braided

Chiraflon
monofilament

Silon monofilament

Steel Wire

Monolac
monofilament

Chirasorb rapid braided

Chirasorb Plus braided

Surgical Sutures - Absorbable threads

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CHIRASORB rapid braided

Intended for use in Skin closure, Paediatric surgery, Episiotomies, Circumcision, Closure of oral mucosa and Ophthalmic surgery for conjunctival sutures.



Composition	Colour	Range	Characteristics
Braided and coated suture made from 90% glycolide and 10% L-lactide	Violet and Natural	6/0 to 2 USP	Absorbable, multifilament, coated, synthetic, high tensile strength, reduced capillary effect, short-term healing

CHIRLAC rapid braided

Intended for use in Gynaecology, Skin Closure, Ophthalmic, Odontology and Paediatric surgery.



Composition	Colour	Range	Characteristics
Braided and coated suture made of Polyglycolic acid (PGA)	Violet and Natural	6/0 to 4 USP	Absorbable, multifilament, coated, synthetic, high tensile strength, reduced capillary effect, short-term healing

MONOLAC monofilament

General soft tissue approximation and/or ligation in all specialties, where an absorbable material is indicated.



Composition	Colour	Range	Characteristics
Monofilament suture made of Glycolide and ϵ -caprolactone	Violet and Natural	6/0 to 2 USP	Absorbable, monofilament, synthetic, high tensile strength, excellent handling properties, mid-term healing

CHIRASORB braided

Intended for use in general soft tissue approximation and/or ligation in all specialties, including use in Ophthalmic surgery.



Composition	Colour	Range	Characteristics
Braided and coated suture made from 90% glycolide and 10% L-lactide	Violet and Natural	10/0 to 6 USP	Absorbable, multifilament, coated, synthetic, high tensile strength, reduced capillary effect, mid-term healing

CHIRASORB Plus braided

Antibacterial

Intended for use in general soft tissue approximation and/or ligation in all specialties.



Composition	Colour	Range	Characteristics
Antibacterial, braided and coated suture made from 90% glycolide, 10% L-lactide and chlorhexidine diacetate	Violet and Natural	5/0 to 4 USP	Absorbable, multifilament, anti-bacterial coating, synthetic, high tensile strength, reduced capillary effect, mid-term healing

CHIRLAC braided

Intended for use in general soft tissue approximation and/or ligation, surgical adaptation of Muscles and Fascia, suturing of Parenchymal organs, Peripheral nerves and ligatures of small vessels and for Intradermal suturing.



Composition	Colour	Range	Characteristics
Braided and coated suture made of Polyglycolic acid (PGA)	Violet and Natural	9/0 to 6 USP	Absorbable, multifilament, coated, synthetic, high tensile strength, reduced capillary effect, mid-term healing

POLYDOX monofilament

Intended for use in general soft tissue approximation, Orthopaedics, Fascia Closure, Urology, Gynaecology and Plastic surgery. Recommended for long-term healing.

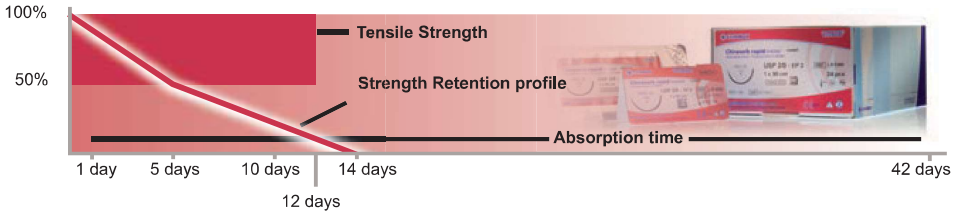


Composition	Colour	Range	Characteristics
Monofilament suture made of Poly-p-dioxanone	Violet and Natural	7/0 to 4 USP	Absorbable, monofilament, synthetic, high tensile strength, excellent knotting properties, long-term healing

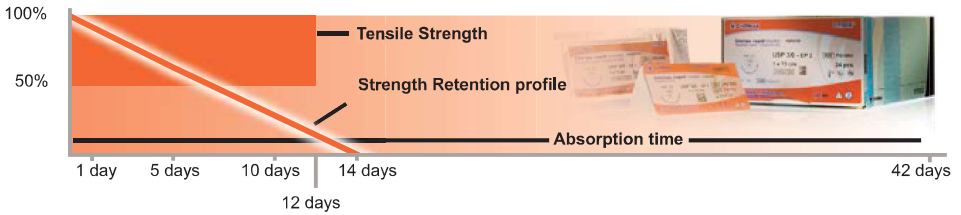
Surgical Sutures - Absorbable threads

SHORT-TERM HEALING

CHIRASORB Rapid Braided

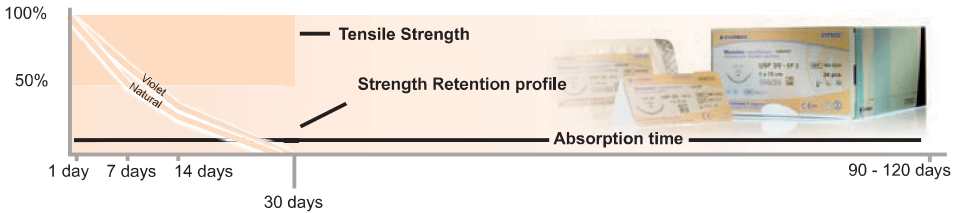


CHIRLAC Rapid Braided

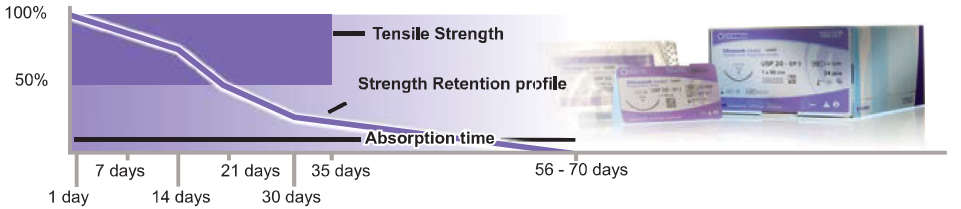


MID-TERM HEALING

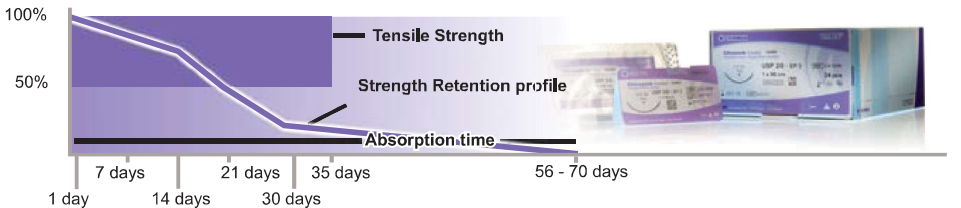
MONOLAC Monofilament



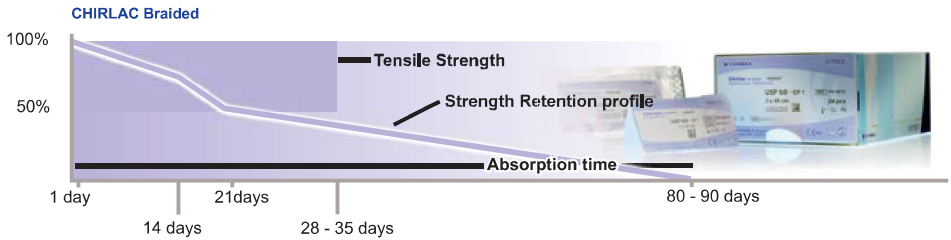
CHIRASORB Braided



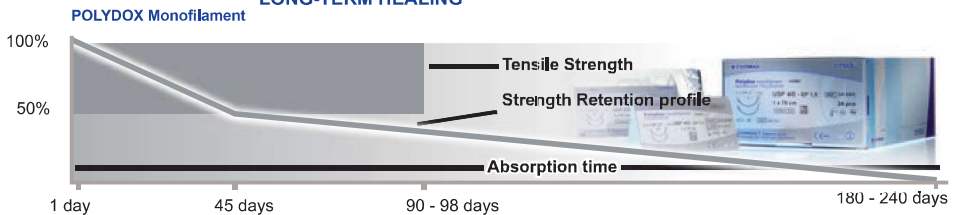
CHIRASORB Plus Braided



MID-TERM HEALING



LONG-TERM HEALING



VITREX MEDICAL SUTURES	Strength Retention profile	Tensile Strength	Absorption time
CHIRASORB RAPID BRAIDED	SHORT-TERM HEALING 1 day 100% 5 days 50% 10 - 14 days 0%	12 days	42 days
CHIRLAC RAPID BRAIDED	SHORT-TERM HEALING 1 day 100% 5 days 60% 10 - 14 days 0%	12 days	42 days
MONOLAC MONOFILAMENT	MID-TERM HEALING 1 day 100% 7 days 60% (violet), 50% (natural) 14 days 30% (violet), 20% (natural) 28 days 0%	30 days	90 - 120 days
CHIRASORB BRAIDED	MID-TERM HEALING 1 day 100% 14 days 75% 21 days 50% 30 days 25% 56 - 70 days 0%	35 days	56 - 70 days
CHIRASORB PLUS BRAIDED	MID-TERM HEALING 1 day 100% 14 days 75% 21 days 50% 56 - 70 days 0%	35 days	56 - 70 days
CHIRLAC BRAIDED	MID-TERM HEALING 1 day 100% 14 days 65% - 75% 21 days 45% - 50% 80 - 90 days 0%	28 - 35 days	80 - 90 days
POLYDOX MONOFILAMENT	LONG-TERM HEALING 1 day 100% 45 days 50% 180 - 240 days 0%	90 - 98 days	180 - 240 days

Surgical Sutures - Non-absorbable threads

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CHIRAFLON monofilament

Intended for use in all surgical specialities, especially Orthopaedic, Traumatology (tendons), Plastic and Ophthalmic surgery (optimal, temporary, easily, removable suture).



Composition	Colour	Range	Characteristics
Monofilament suture made of Polyvinylidene Fluoride (PVDF) - similar to Teflon	Blue	8/0 to 3 USP	Non-absorbable, monofilament, synthetic, no capillary effect, very smooth, excellent knotting properties, easy to handle, physiologically inert

CHIRALEN monofilament

Intended for use in all surgical specialities, especially Cardiovascular, Plastic, Reconstructive, Ophthalmic, Orthopaedics and Traumatology (tendons).



Composition	Colour	Range	Characteristics
Monofilament suture made of Polypropylene	Blue and Black	10/0 to 2 USP	Non-absorbable, monofilament, synthetic, no capillary effect, smooth, non-porous surface, suitable for stitches in infected wounds

SILON monofilament

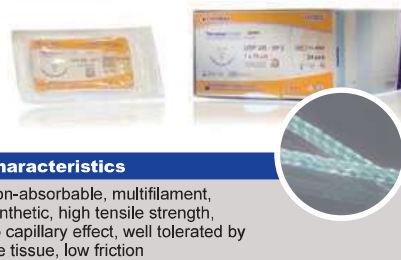
Intended for use in Plastic and General surgery and wherever suturing the skin.



Composition	Colour	Range	Characteristics
Monofilament suture made of Polyamide 6	Blue and Black	10/0 to 2 USP	Non-absorbable, monofilament, synthetic, very smooth, excellent knotting properties, easy to handle, loss of tensile strength after long-term implantation

TERVALON braided

Intended for use whenever non-absorbability and low friction passage through tissues are needed. It is especially useful in suturing Tendons, Schwann sheaths and skin in Plastic and Reconstructive surgery.



Composition	Colour	Range	Characteristics
Braided and coated suture made of Polyester	Green and White	6/0 to 6 USP	Non-absorbable, multifilament, synthetic, high tensile strength, no capillary effect, well tolerated by the tissue, low friction

Surgical Sutures - Non-absorbable threads

SILON braided ORSILON braided

Intended for use in Skin Closure, Subcutaneous tissue, Transversely cut muscles, Fascia, Peritoneum, Gastrointestinal Tract and Blood vessels ligation.



Composition	Colour	Range	Characteristics
Braided suture made of Polyamide	White and Black	5/0 to 5 USP	Non-absorbable, multifilament, synthetic, high tensile strength, excellent knotting properties, loss of tensile strength after long-term implantation

SILK braided

Intended for use in Skin closure, Subcutaneous tissue, Fascia, Peritoneum, Plastic surgery, Gynaecology and the organs of the Gastrointestinal tract.



Composition	Colour	Range	Characteristics
Braided and coated suture made of Silk	Black	9/0 to 5 USP	Non-absorbable, multifilament, synthetic, no capillary effect, loss of tensile strength after long-term implantation

STEEL Wire

Intended for use in Abdominal wound closure, Sternal closure, Orthopaedic procedures and Tendons.



Composition	Colour	Range	Characteristics
Monofilament suture made of 316LVM Stainless steel	Steel	1 to 7 USP	Non-absorbable, monofilament, superior steel, flexible wire, excellent tissue penetration, high tensile strength

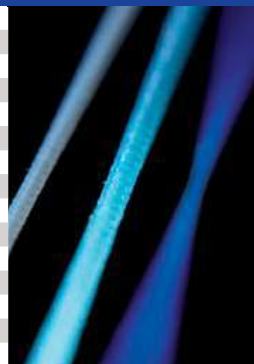
European Pharmacopoeia

The publication of the European Pharmacopoeia (Ph. Eur.) resulted in a standardization of the classification of threads and gauges of surgical suture material.

The Ph. Eur. specifies a decimal classification and metric coding for the gauges. It quotes a thread diameter of 1/10 mm, so that the thread gauge of 3.5 has a diameter of 0.35 mm.

The following table of the gauges gives a comparison of the metric and the USP gauge coding.

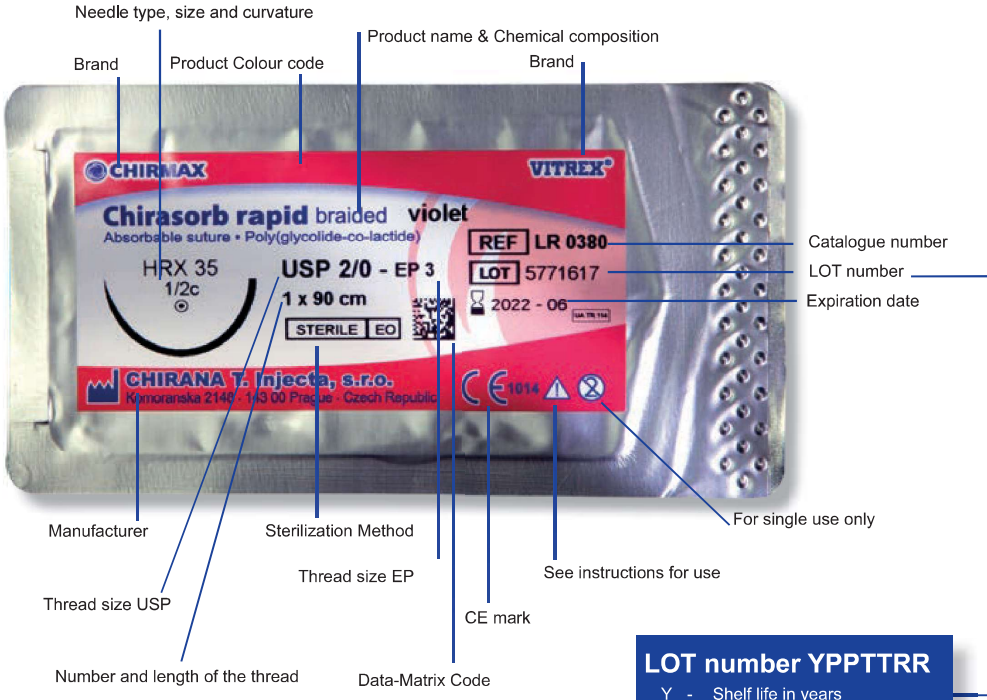
EP/ Metric	USP	Ø (mm)	Ø (mm) Absorbable monofilaments
0.2	10-0	0,020-0,029	
0.3	9-0	0,030-0,039	
0.4	8-0	0,040-0,049	
0.5	7-0	0,050-0,069	0,050-0,094
0.7	6-0	0,070-0,099	0,095-0,149
1	5-0	0,100-0,149	0,150-0,199
1.5	4-0	0,150-0,199	0,200-0,249
2	3-0	0,200-0,249	0,250-0,339
3	2-0	0,300-0,349	0,340-0,399
3.5	0	0,350-0,399	0,400-0,499
4	1	0,400-0,499	0,500-0,570
5	2	0,500-0,599	0,571-0,610
6	3+4	0,600-0,699	
7	5	0,700-0,799	
8	6	0,800-0,899	



Labelling and Packaging

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Surgical Sutures - Overview



LOT number YPPTRR

- Y - Shelf life in years
- PP - Production number
- TT - Week of production
- RR - Year of production

Identification label

For quick registration

The label contains:

- Name of material
- Batch / LOT number
- Expiration date
- Catalogue number
- Manufacturer

CHIRASORB
LOT 5080814
2022-08 LV 0224
CHIRANA T. Injecta





Packaging

The packaging of CTI's surgical suture material is stable, user-friendly and functional. It provides optimal mechanical and bacterial safety. The sutures are ready for use in a sterile foil or aluminium pack.

Each primary sales unit contains 24 individual packs, whereas some contain 12 individual packs (Loop sutures or Microsurgery sutures) or 20 individual packs (Chirapack sutures).

CTI short threads

Pre-cut length surgical sutures.

CTI atraumatic sutures

Pre-cut length surgical sutures, armed with a drilled end needle, ready for use. Removable needles are marked with an A behind the needle description.

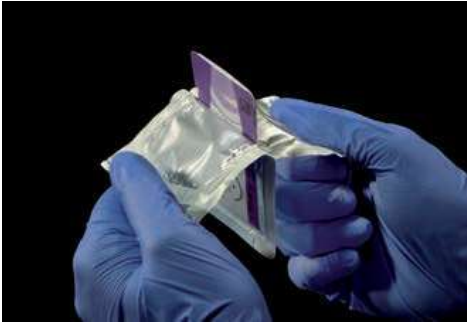
CTI Chirapack

2.5 or 3 meters of suture material on a thread spool, ready for use. Each sales unit contains 20 individual packs.



How to unpack the suture - Alufoil

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1. Open the non-sterile outer package



2. Transfer to sterile area



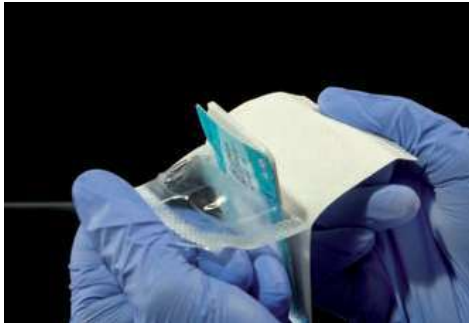
3. Tear off the opening system, indicated by the dotted line



4. Take immediate, direct hold of the needle. Pull out the suture towards the right



How to unpack the suture - Blisterfoil



1. Open the non-sterile outer package



2. Transfer to sterile area



3. Tear off the opening system, indicated by the dotted line

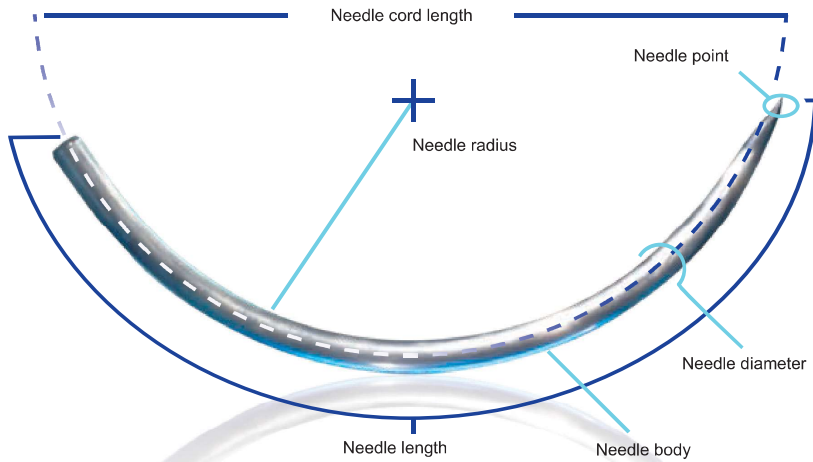


4. Take immediate, direct hold of the needle. Pull out the suture towards the right



Surgical Sutures - Needle geometry

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Taper point
(round body)



Trapezoid spatulated



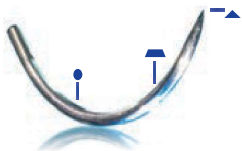
Conventional cutting
(inside cutting edge)



Tapercut



Reverse trapezoid spatulated



Reverse cutting
(outside cutting edge)



Blunt point



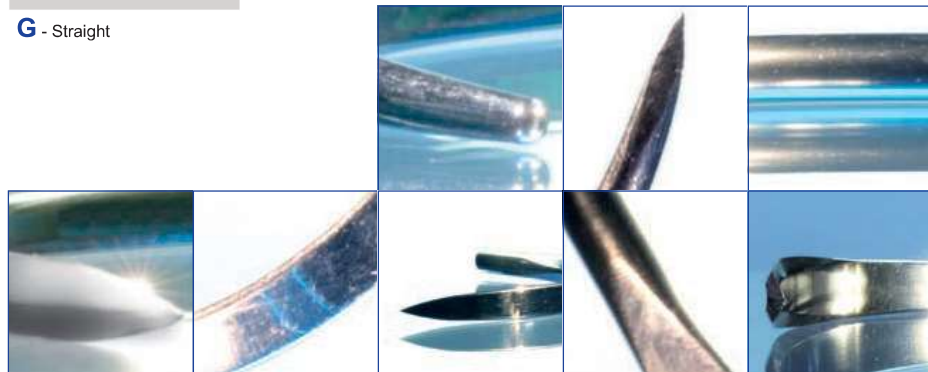


Needle Curvature	Needle Body	Needle Point	Speciality
V - 1/4	R - Round body	T - Tapercut	S - Slim, rectangular body
H - 1/2	S - Reverse cutting	N - Blunt	A - Take-off needle
D - 3/8	SC - Conventional cutting	M - Micropoint	X - Extra strong needle
F - 5/8	LZ - Spatula		Black - Black needle
J - Hook	RF - Round, flattened body		

A - Asymmetric

K - Ski

G - Straight

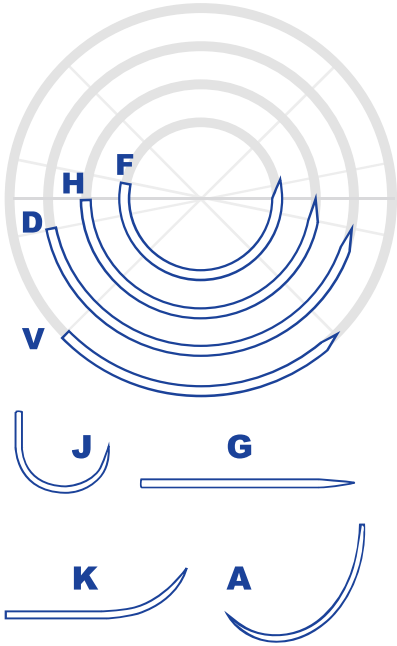


Surgical Sutures - Needle geometry

Needle curvature

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Surgical Sutures - Overview



F	5/8 circle	Anal region, Nasal cavity, Urogenital tract, Pelvic region or other confined spaces.
H	1/2 circle	Gastrointestinal tract, Respiratory tract, Urogenital tract, Cardiovascular, Fascia, Muscle, Nasal cavity, Oral cavity, Eye, Pelvis, Skin, Tendons, Subcutaneous fat.
D	3/8 circle	Cardiovascular, Aponeurosis, Nerves, Dura-mater, Fascia, Periostium, Pleura, Urogenital tract, Myocardium, Skin, Eye, Muscles.
V	1/4 circle	Ophthalmology
J	Hook	Urology, laparoscopy
G	Straight	Nasal cavity, Gastrointestinal tract, Oral cavity, Skin, Tendons, Larynx, Vessels.
K	Ski	Laparoscopy, Skin. Allows easy removal of frag-ments and easy needle holder manipulation.
A	Asymmetric	Plastic, Aesthetics, Robotics, Endoscopy.

Needle/thread combinations

SINGLE ARMED

Single stitch
Continuous suture

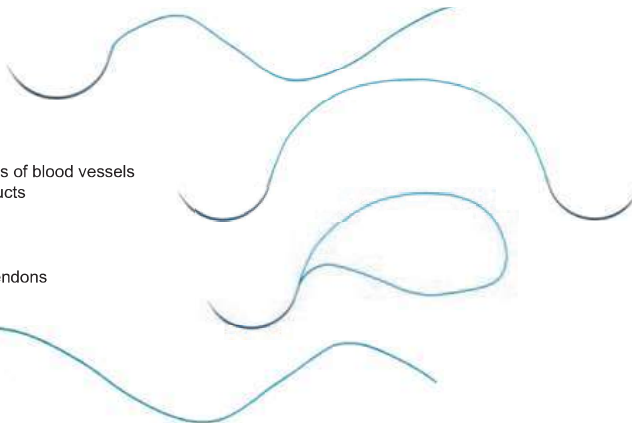
DOUBLE ARMED

Mainly for anastomosis of blood vessels
or other anatomical ducts



























LOOP

Abdominal wall and tendons

LIGATURES



Surgical Sutures - Needle range

HR 	HR 	HR 
<p>½ circle, round body needle</p> <p>HR 8 </p> <p>HR 10 </p> <p>HR 13 </p> <p>HR 15 </p> <p>HR 16 </p> <p>HR 17 </p> <p>HR 18 </p> <p>HR 22 </p> <p>HR 25 </p> <p>HR 26 </p> <p>HR 26 Black </p> <p>HR 27 </p> <p>HR 30 </p>	<p>½ circle, round body needle</p> <p>HR 35 </p> <p>HR 37 </p> <p>HR 40 </p> <p>HR 43 </p> <p>HR 45 </p> <p>HR 48 </p>	<p>½ circle, round body needle</p> <p>HR 50 </p> <p>HR 60 </p> <p>HR 65 </p> <p>HR 75 </p>

The needle pictures are only for illustration

Surgical Sutures - Needle range

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Surgical Sutures - Overview

HR s

½ circle, round body needle
- slim

HR s 18



HR s 22 Black



HR s 27 Black



HRX

½ circle, round body needle
- extra strong

HRX 22



HRX 26



HRX 27



HRX 30



HRX 35



HRX 36



HRX 37



HRX

½ circle, round body needle
- extra strong

HRX 40



HRX 45



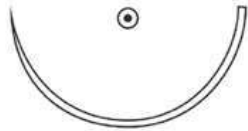
HRX 48



HRX 50



HRX 70



The needle pictures are only for illustration



Surgical Sutures - Needle range

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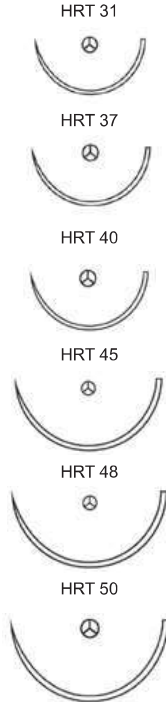
HRT

½ circle, round body needle,
tapercut



HRT

½ circle, round body needle,
tapercut



HRTX

½ circle, round body needle
- extra strong, tapercut



HRN

½ circle, round body needle
- blunt point



The needle pictures are only for illustration



Surgical Sutures - Needle range

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HRF

½ circle, flattened body needle, taper point



DR

3/8 circle, round body needle



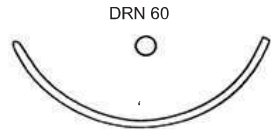
DRT

3/8 circle, round body needle, tapercut



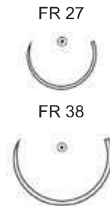
DRN

3/8 circle, round body needle, blunt point



FR











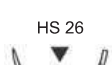
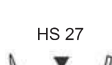







5/8 circle, round body needle



The needle pictures are only for illustration

Surgical Sutures - Needle range

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GR ○	JRT △	HS ▼
<p>Straight, round body needle</p> <p>GR 20</p>  <p>GR 45</p>  <p>GR 60</p> 	<p>Hook shaped, round body needle, tapercut</p> <p>JRT 30</p> 	<p>½ circle, reverse cutting needle</p> <p>HS 12</p>  <p>HS 15</p>  <p>HS 18</p>  <p>HS 21</p>  <p>HS 22</p>  <p>HS 25</p>  <p>HS 26</p>  <p>HS 27</p>  <p>HS 30</p>  <p>HS 36</p> 
<p>ART △</p> <p>Asymmetric, round body needle, tapercut</p> <p>ART 30</p>  <p>ART 30 Black</p> 	<p>J-RX ○</p> <p>Hook shaped, round body needle</p> <p>J-RX 22</p>  <p>J-RX 30</p> 	<p>The needle pictures are only for illustration</p>
<p>KR ○</p> <p>Ski needle, round body</p> <p>KR 27</p> 		

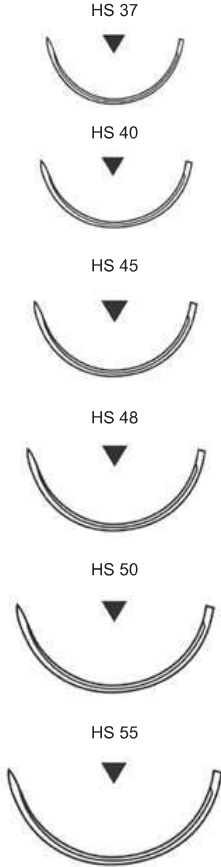
Surgical Sutures - Needle range

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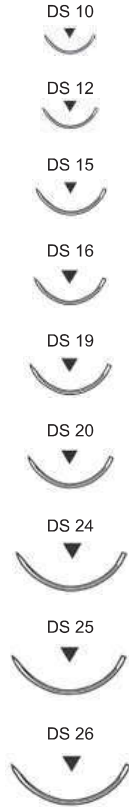
Surgical Sutures - Overview

HS ▼	DS ▼	DS ▼
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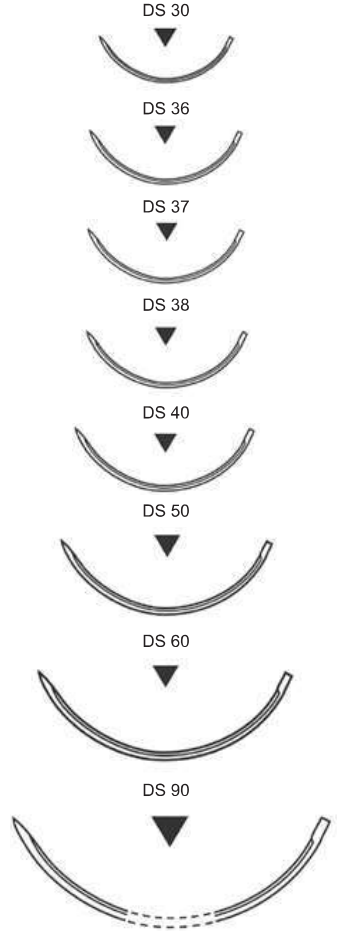
1/2 circle, reverse cutting needle



3/8 circle, reverse cutting needle



3/8 circle, reverse cutting needle








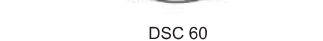















The needle pictures are only for illustration



Surgical Sutures - Needle range

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DSC ▲	DSM ▼	GS ▼
<p>3/8 circle, conventional cutting needle</p> <p>DSC 15 </p> <p>DSC 16 </p> <p>DSC 22 </p> <p>DSC 25 </p> <p>DSC 26 </p> <p>DSC 40 </p> <p>DSC 60 </p> <p>DSC 90 </p>	<p>3/8 circle, reverse cutting needle, micropoint</p> <p>DSM 6.5 </p> <p>DSM 12 </p> <p>DSM 15 </p> <p>DSM 19 </p> <p>DSM 25 </p>	<p>Straight, reverse cutting needle</p> <p>GS 13 </p> <p>GS 50 </p> <p>GS 60 </p> <p>GS 65 </p> <p>GS 75 </p>
DSMC ▲		
<p>3/8 circle, conventional cutting needle, micropoint</p> <p>DSMC 16 </p> <p>DSMC 19 </p> <p>DSMC 20 </p>		

The needle pictures are only for illustration

Surgical Sutures - Needle range

Microsurgery

UK04
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Surgical Sutures - Overview

DR

3/8 circle, round body needle

DR 3.75



DR 5



DR 5 Black



DR 5.1



DR 6



DR 6.5



DSM

3/8 circle, reverse cutting needle, micropoint

DSM 6.5



DSM 8



VSM

1/4 circle, reverse cutting needle, micropoint

VSM 8



HLZ

1/2 circle, spatulated

HLZ 8



DLZ

3/8 circle, spatulated

DLZ 6.2



DLZ 6.4



VLZ

1/4 circle, spatulated

VLZ 8



GLZ

Straight, spatulated

GLZ 16

