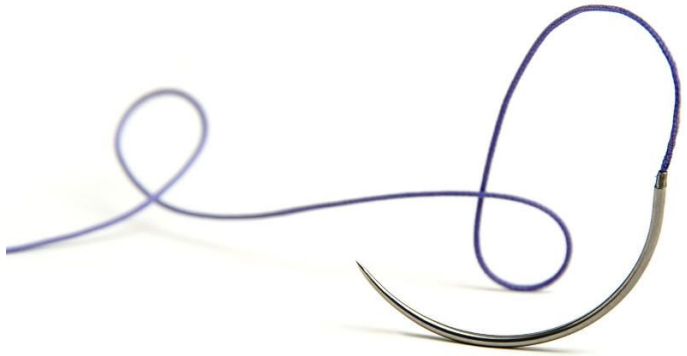
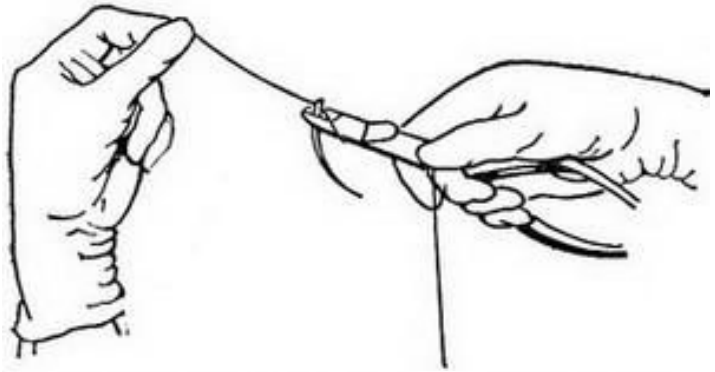
SUTURE MATERIAL

SUTURE MATERIAL CAN BE:

Atraumatic

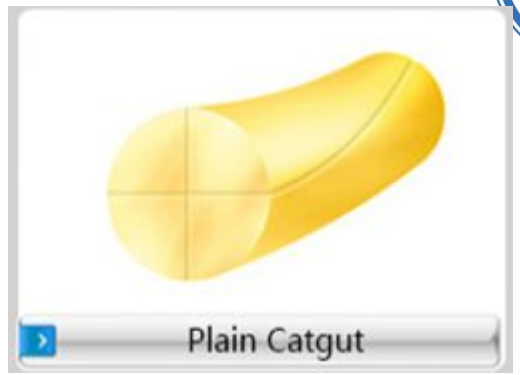


Traumatic

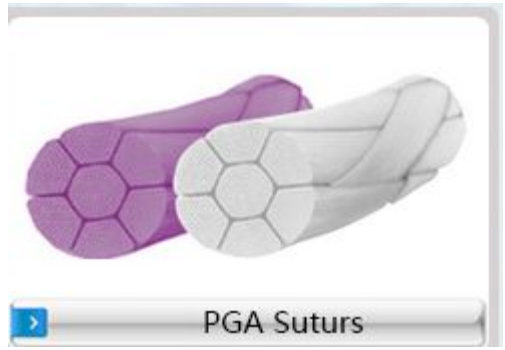


CLASSIFICATION OF SUTURE MATERIAL

1. By historical feature:

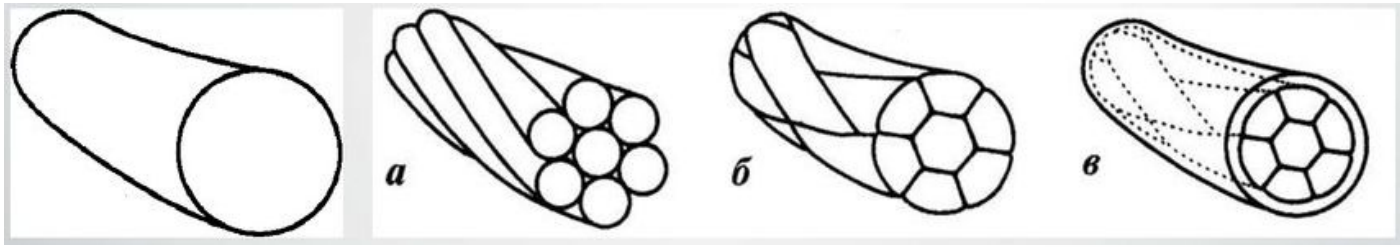


1. ***Traditional suture materials:*** *catgut (animal gut), silk, horsehair, cotton*
2. ***Synthetic suture materials:*** *Polyglycolic acid(PGA), polylactide, polyamide, polyester, polypropylene, PVDF*



2. By structure:

1. ***Monofilament*** *(пролен, ПДС, этилон, нейлон, суржипро, максон и тд)*



2. ***Multifilament***

- *Twisted (silk, caprone)*
- *Braided (lavsan, mercilene, etibond)*
- *Coated or pseudo-monofilament (vicryl, polysorb, supramide)*

CLASSIFICATION OF SUTURE MATERIAL

3. By the ability to absorption (biodestruction):

1. ***Absorbable*** *— catgut, vicryl, polysorb, дексон, monocryl, PDS.*
2. ***Pseudo-absorbable*** *– silk, caprone.*
3. ***Non- absorbable*** *—etibond, lavsan, prolene, surgipro, polypropilene, stainless steel wire.*

4. By starting materials:

1. ***Natural starting organic materials -*** *(catgut (animal gut), silk, horsehair, threads made of fascias, tendons, peritoneum).*
2. ***Natural starting mineral materials -*** *(stainless steel wire).*
3. ***Synthetic materials****(polyesters, polyolefins, fluoropolymers): vicryl, PDS, PGA, monocryl, maxon, etibond, lavsan etc.*

REQUIREMENTS TO “IDEAL” SUTURE MATERIAL

1. Biocompatibility (no tissue reaction);
2. No sawing action;
3. No wicking;
4. Flexibility, thread ca be easily knotted;
5. High tensile strength;
6. High knot security;
7. Absorption ability;
8. Universatility;
9. Sterility.
10. Price accessibility.

DIFFERENCE BETWEEN CATGUT AND MODERN SUTURE MATERIAL

Modern materials	Catgut
More durable	Less durable
More comfortable in surgeon's hands	Can slide in the hands
Clear terms of absorption	Unpredictable term of absorption
Absorbs by hydrolysis	Absorbs enzymatically (proteolysis)
Low wicking	High wicking of the thread
Almost absent tissue reaction	High tissue reaction

SIZE OF SUTURE SURGICAL MATERIALS

Diameter, mm	Size number, USP	Metric size, EP
0,010-0,019	11/0	0.1
0,020-0,029	10/0	0.2
0,030-0,039	9/0	0.3
0,040-0,049	8/0	0.4
0,050-0,069	7/0	0.5
0,070-0,099	6/0	0.7
0,100-0,149	5/0	1
0,150-0,199	4/0	1.5
0,20-0,29	3/0	2
0,30-0,33	2/0	3
0,35-0,39	0	3.5
0,40-0,49	1	4
0,50-0,59	2	5
0,60-069	3.4	6
0,70-0,79	5	7
0,80-0,89	6	8
0,90-0,99	7	9
1,00-1,10	8	10

NEEDLE TYPES

A			Spatula needle
B			Round-bodied cutting needle (tapercut)
C			Round-bodied needle
D			Reverse cutting needle
E			Reinforced needle
F			Flattened round-bodied needle
T			Blunt round-bodied needle

Cross-section and point of the needle

1. Spatula needle ▭ = P
1/2-, 3/8- or 1/4-circle or straight = HSPM, DSPM, VSPM, GSPM

- For ophthalmic and microsurgery
- Flattened needle body
- PREMIUM-cut
- Lateral cutting edge

2. Reverse cutting needle ▼ = S
1/2-, 3/8-half-curved or straight, 1/2 = HS, DS, KS, GS

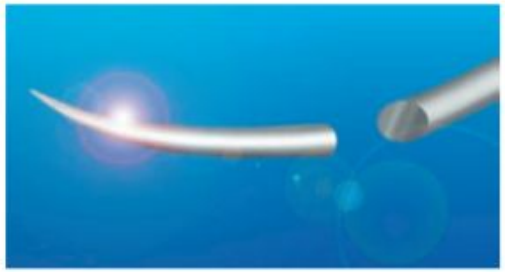
- For firm tissue, e.g. skin
- Triangular needle cross-section
- Some needles available as PREMIUM-cut: M, MF, and MFX

3.Round-bodied cutting needle ▼◆ = RT
1/2-, 3/8-circle, asymptotic or straight = HRT, DRT, GRT, ART

- For firm tissue, sclerotic vessels, and prostheses
- Needle point with three or four cutting edges, thus producing a narrow puncture canal which penetrates tissue like a cutting ▼ needle (some available as PREMIUM-cut)

4. Blunt, round-bodied needle ○ = RN
1/2-, 3/8-circle or half-curved = HRN, DRN, KRN

- For parenchymatous tissue, cervix and muscles of the eye
- Blunt needle point
- Cannot pierce vessels or tendons



5. Round-bodied needle ● = R
5/8-, 1/2-, 3/8-circle or straight = FR, HR, DR, GR

- For soft (subcutaneous) tissue, e.g. muscle, fascia, mucosa
- The middle of the needle is flat for better seating in the needle-holder
- Conical tapering fine needle tips
- Easy tissue penetration

NEEDLE BENDING

1/4 3/8 1/2 5/8

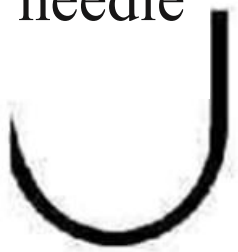
= 8/8; 4/4; 2/2

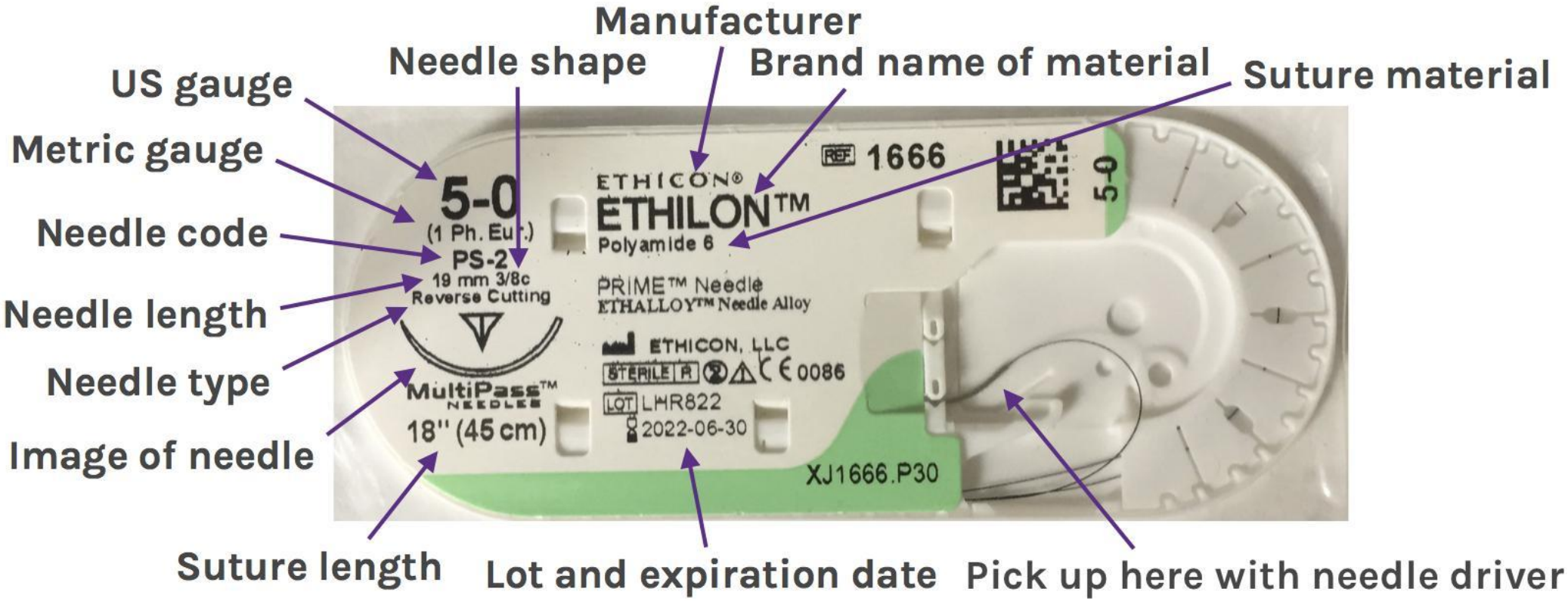
“Ski” form

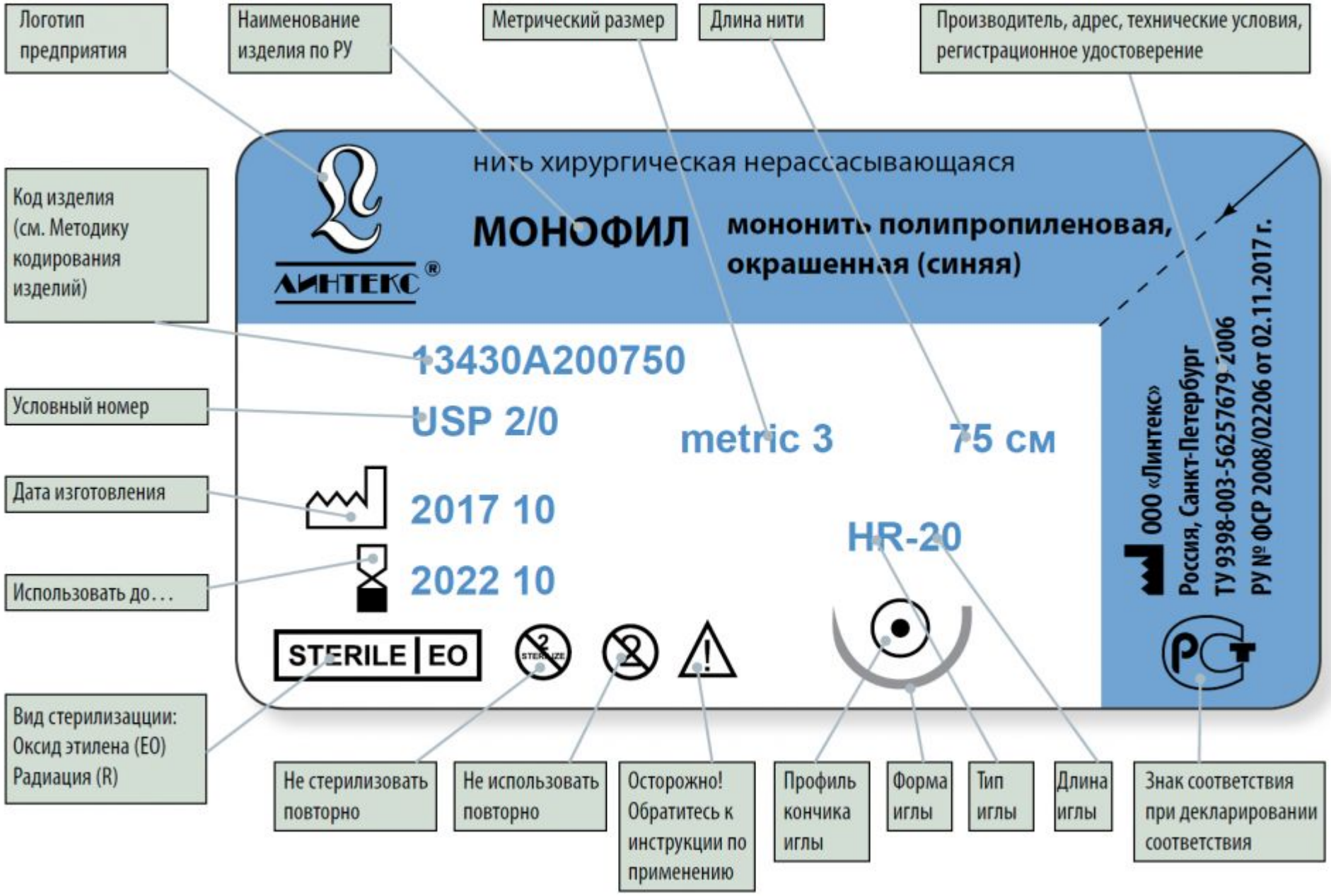
Straight

With double curvature

J - needle




US gauge
Metric gauge
Needle code
Needle length
Needle type
Image of needle
Suture length
Needle shape
Manufacturer
Brand name of material
Suture material
Lot and expiration date
Pick up here with needle driver
5-0
(1 Ph. Eur.)
PS-2
19 mm 3/8c
Reverse Cutting
MultiPass™
NEEDLES
18" (45 cm)
ETHICON®
ETHILON™
Polyamide 6
REF 1666
5-0
PRIME™ Needle
ETHALLOY™ Needle Alloy
ETHICON, LLC
STERILE R
0086
LOT LHR822
2022-06-30
XJ1666.P30


Логотип предприятия
Наименование изделия по РУ
Метрический размер
Длина нити
Производитель, адрес, технические условия, регистрационное удостоверение
Код изделия (см. Методику кодирования изделий)
Условный номер
Дата изготовления
Использовать до…
Вид стерилизацции: Оксид этилена (EO) Радиация (R)
нить хирургическая нерассасывающаяся
МОНОФИЛ
мононить полипропиленовая, окрашенная (синяя)
ЛИНТЕКС
13430A200750
USP 2/0
metric 3
75 см
2017 10
2022 10
HR-20
STERILE EO
ООО «Линтекс»
Россия, Санкт-Петербург
ТУ 9398-003-56257679-2006
РУ № ФСР 2008/02206 от 02.11.2017 г.
Не стерилизовать повторно
Не использовать повторно
Осторожно! Обратитесь к инструкции по применению
Профиль кончика иглы
Форма иглы
Тип иглы
Длина иглы
Знак соответствия при декларировании соответствия