

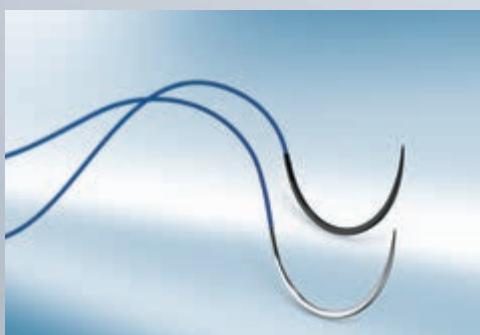
Optilene[®]

A SMOOTH MONOFILAMENT SUTURE
FOR CARDIOVASCULAR SURGERY

Non-absorbable monofilament suture
made of polypropylene and polyethylene

Optilene®

A SMOOTH MONOFILAMENT SUTURE FOR CARDIOVASCULAR SURGERY



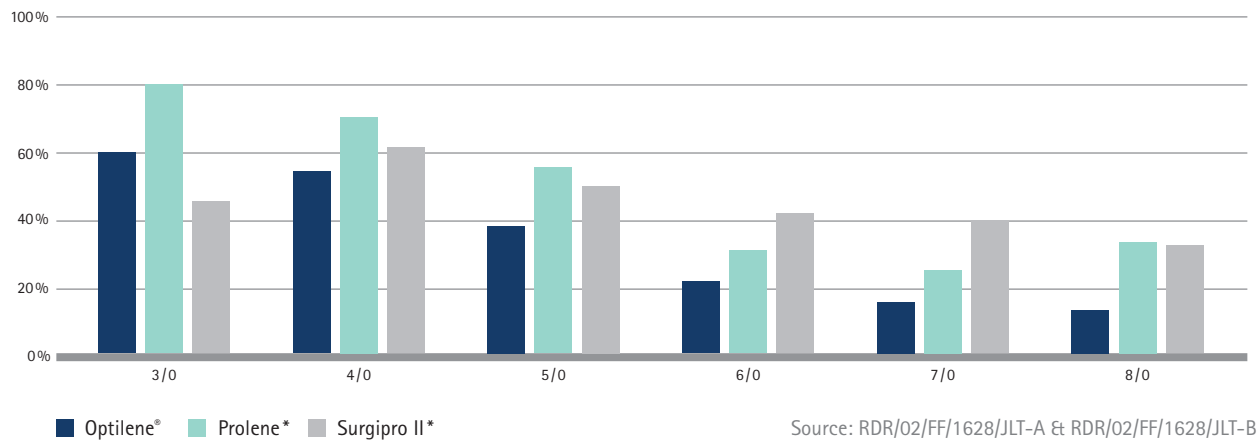
An increasingly aging population combined with more complex and diffuse cardiac diseases result in more challenging cardiac cases in daily practice. For that reason B. Braun is committed to providing you with the high quality and innovative surgical products sharing with you the same passion for Cardiovascular Surgery.

Optilene® is a non-absorbable monofilament suture made of polypropylene and polyethylene which has been specifically designed for Cardiovascular Surgery.

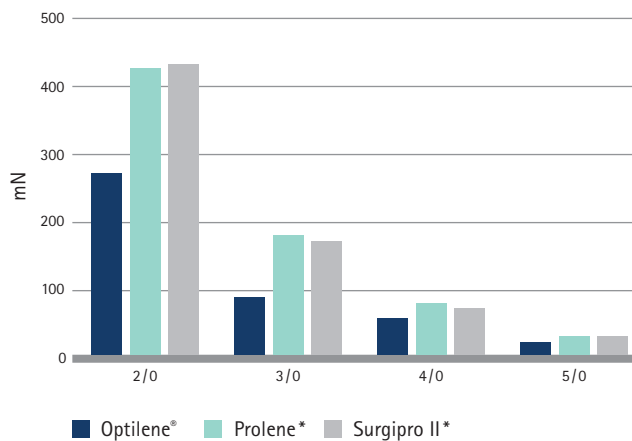
PRECISION AND EASE OF USE, OUR TOP PRIORITIES

- Superior smoothness and smaller tissue drag than polypropylene sutures.^{1-3, 12}
- Controlled knot run-down and proven reliable tensile strength.⁴⁻⁹
- Good handling endorsed by cardiothoracic surgeons.¹²
- Lower memory effect than the market standard and high thread "pig-tailing" resistance.^{4, 5, 10, 11, 28}
- Reengineered pliability for good touch and controlled suture elongation in microsurgery sizes.^{4, 5, 7}
- Improved thread visibility for enhanced visual comfort.^{13, 14}

MEMORY EFFECT

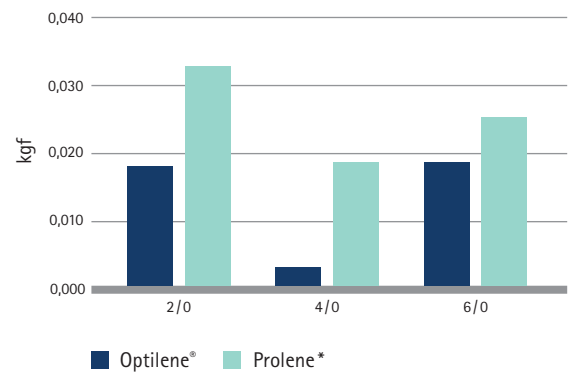


STIFFNESS



KNOT RUNNING STRENGTH

Lower values lead to smoother thread and knot running down.



Superior smoothness and smaller tissue drag than polypropylene sutures²³⁻²⁶



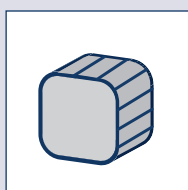
Lower memory effect than the market standard and high thread "pig-tailing" resistance²⁰⁻²²

*The product trademark "Prolene" is a trademark of Ethicon and the product trademark "Surgipro II" is a trademark of Medtronic.

Optilene®

A SMOOTH MONOFILAMENT SUTURE FOR CARDIOVASCULAR SURGERY

Optilene® NEEDLES



Semi square body design

Improves bending strength resistance.

Layer of silicon coating



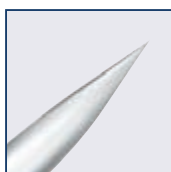
USP

2
1
0
2/0
3/0
4/0
5/0
6/0
7/0
8/0
9/0
10/0

BOTH RANGES AND ALL USP SIZES FEATURE...

Excellent penetration

■ Taper point:
Designed for an easy penetration of soft tissues.¹⁵



■ Short cutting point:
Designed to improve penetration through calcified tissues and increase bending strength for cardiovascular indications.¹⁵



Range of fine needles for a lower traumaticity

Fine needle versions, labelled as "f", which offer a reduction of up to 38 % in the needle-to-thread ratio compared to the standard needles.¹⁶



Reinforced needle

Reinforced versions, labelled as "s", also available.

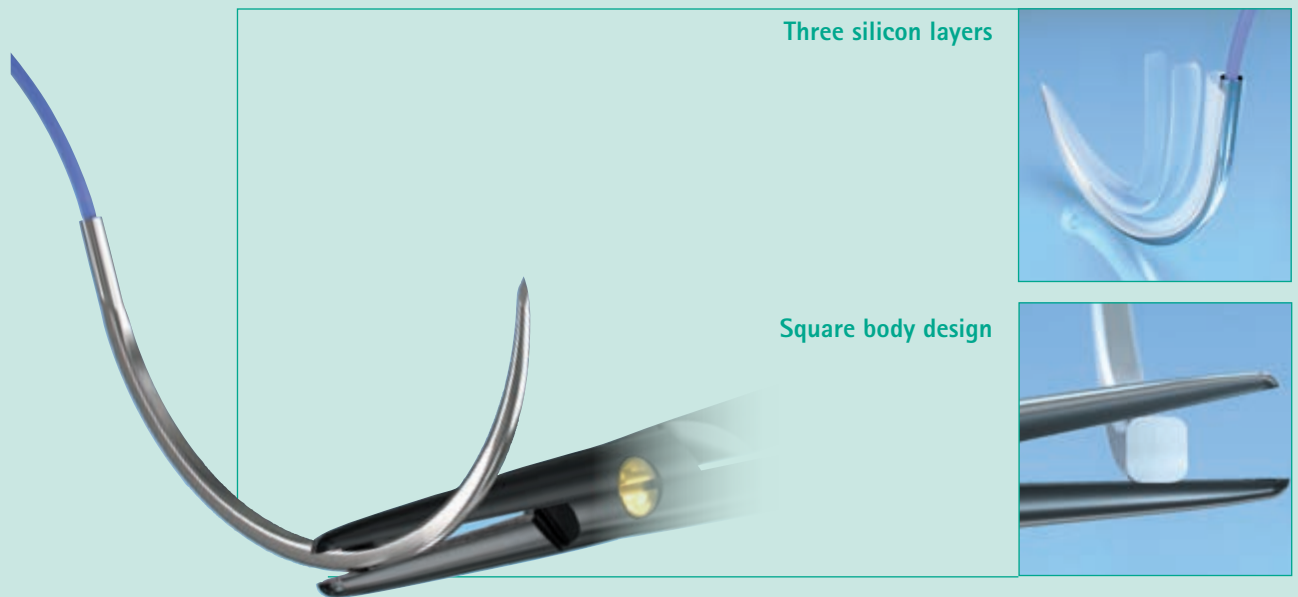
A NEW NEEDLE GENERATION FOR CARDIOTHORACIC SURGERY

■ Enhanced stability of the needle in the grasp of the needle holder †, 17, 18

■ Improved successive penetration after repeated stitches †, 17-19

USP*

2
1
0
2/0
3/0
4/0
5/0
6/0
7/0
8/0
9/0
10/0



* When needle diameter is up to 0,30 mm

* Ratio of the areas

† In comparison with standard needles.¹⁷⁻¹⁹

† In comparison with Ethicon Multipass needles.

† In comparison with standard (steel colour) needles.

Low reflection

Black and silver versions available. Black needles are specially designed to improve visibility of the needles during the surgical procedure.¹⁵



OptiCABG

ASSESSMENT OF THE PERFORMANCE OF OPTILENE FOR CABG



AIM OF THE STUDY

Evaluate the safety and efficacy of Optilene for CABG surgery in comparison to previously published data.



HYPOTHESIS

If Optilene's results match those generated in a meta-analysis performed by Nalysnyk et al.*, it can be branded as safe and effective for CABG surgery.



PRIMARY ENDPOINT

Incidence of adverse cardiac events like stroke, myocardial infarction, death, renal failure, gastrointestinal bleeding... until day of discharge.



SECONDARY ENDPOINTS

Several parameters were assessed and classified in two categories: safety and efficacy. Among them are listed:

- Handling of the suture material.
- Incidence of adverse events up to 30 days after discharge.
- Improvement of quality of life and employment status until 3 months postoperatively.
- Death rate until 30 days postoperatively.



FOLLOW-UP VISITS

Screening → Surgery → Day of discharge
→ 30 days ± 10 days postop. → 3 months
± 2 weeks postop.

PARTICIPATING HOSPITALS

- GERMANY – Robert-Bosch-Krankenhaus (Stuttgart)
- SPAIN – Hospital de la Santa Creu i Sant Pau (Barcelona)
- ITALY – Ospedale Luigi Sacco (Milano)



READ THE COMPLETE
OPTICABG STUDY ONLINE:

<https://bbraun.info/opticabg>

* L. Nalysnyk, K. Fahrbach, M.W. Reynolds, S.Z. Zhao, S. Ross, Adverse events in coronary artery bypass graft (CABG) trials: a systematic review and analysis, Heart 89 (7) (2003 Jul) 767–772 is a review and analysis of CABG studies published from 1990 to 2001 designed to quantify the incidence of major adverse events occurring in hospital or within 30 days after surgery.

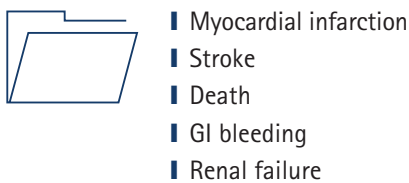
OPTICABG STUDY

THE SURGERIES AT A GLANCE



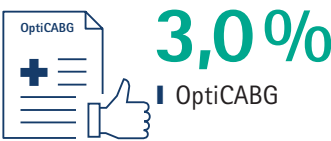
OUTCOME

CABG ADVERSE EVENTS ASSESSED



FACE TO FACE

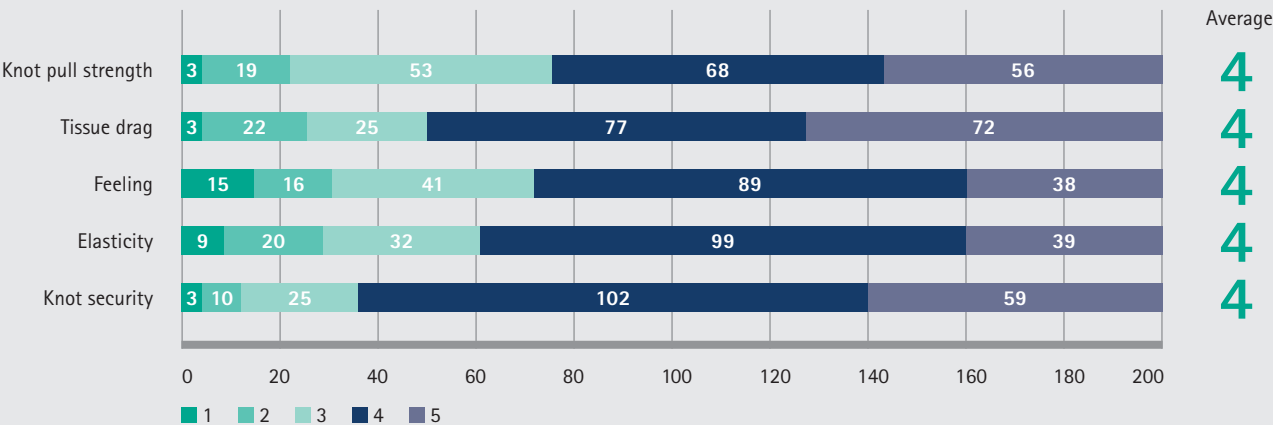
Incidence of CABG adverse events up to day of discharge



Optilene's adverse events rate is lower than the reference rate and can therefore be regarded as a safe and efficient suture for CABG surgery

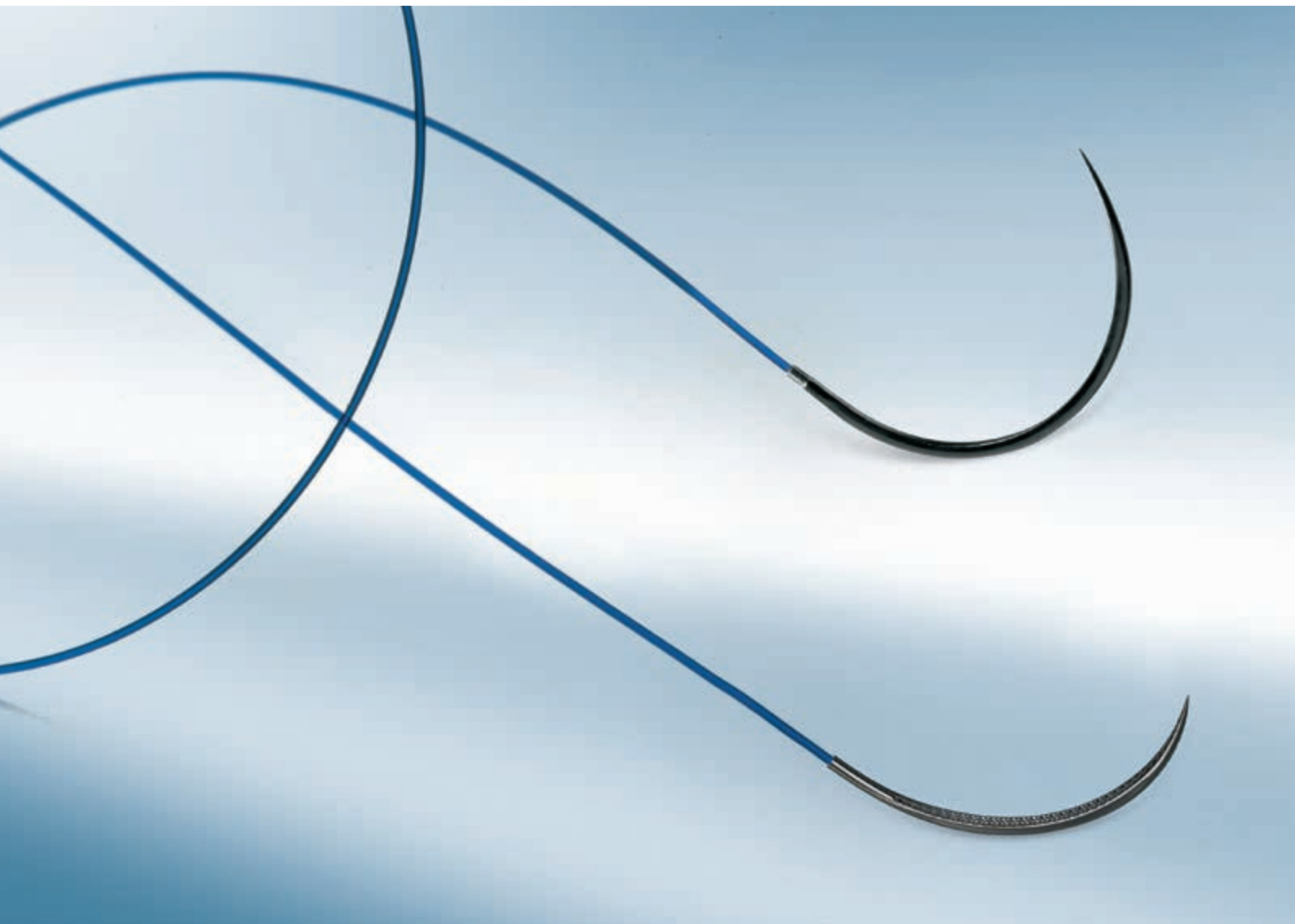
HANDLING OF THE SUTURE

Assessed by surgeons using a five-point scale (1 worst – 5 best)



Optilene®

A SMOOTH MONOFILAMENT SUTURE FOR CARDIOVASCULAR SURGERY



REFERENCES
















- 1 Data on file: RTR/02/FF/1202/JLT-
- 2 Data on file: PTR/02/FF/1202/JLT-R
- 3 Data on file: PTR/02/FF/1202/JLT-G
- 4 Data on file: RDR/DID/MON/MAU/16111
- 5 Data on file: RDR/DID/MON/MAU/15191
- 6 Data on file: PTR/02/FF/1202/JLT-B
- 7 Data on file: RTR/02/FF/1202/JLT-O
- 8 Data on file: RTR/02/FF/1202/JLT-R
- 9 Data on file: PTR/02/FF/1202/JLT-G
- 10 Data on file: RDR/02/FF/1628/JLT-A
- 11 Data on file: RDR/02/FF/1628/JLT-B
- 12 OptiCABG study: Ursulescu A, Baumann P, Ferrer MT, Contino M, Romagnoni C, Antona C, Padró Fernández JM. Optilene, a new non-absorbable monofilament is safe and effective for CABG anastomosis. OPTICABG – A prospective international, multi-centric, cohort study. Ann Med Surg (Lond). (2018) 35 (13-19)
- 13 Data on file: PTR/22/1014/MAU
- 14 Data on file: RDR/DID/MON/LFU/18084
- 15 Data on file: PTR/22/13088/FLB.v2
- 16 Data on file: RDR-DID-MON-LCR-19040
- 17 Data on file: RDR-DID-MON-LCR-18170
- 18 Data on file: RDR-DID-MON-AMG-17152
- 19 Data on file: RDR-DID-MON-LCR-19068
- 20 Data on file: RDR/DID/MON/MAU/16111
- 21 Data on file: RDR/02/FF/1628/JLT-A
- 22 Data on file: RDR/02/FF/1628/JLT-B
- 23 Data on file: RTR/02/FF/1202/JLT-
- 24 Data on file: PTR/02/FF/1202/JLT-R
- 25 Data on file: PTR/02/FF/1202/JLT-G
- 26 Results of OPTICABG Study – Handling of the suture material.
- 27 Data on file: PTR/02/FF/1202/JLT-G
- 28 Data on file: RDR/DID/MON/MAU/15191



















PRODUCT OVERVIEW























Optilene®







































Structure	Monofilament
Colour	Blue
Chemical composition	Polypropylene and polyethylene
Coating	Uncoated
Origin	Synthetic
Sizes	USP 10/0 (0.2 metric) to USP 2 (5 metric)
Type of absorption	Non-absorbable
Indication	cardiovascular, neuro-surgery, ophtalmology, microsurgery, skin closure and general surgery
Sterilisation	Ethylene oxide





















Needle			Thread		USP (metric)						
length mm		length cm colour	8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	
3/8 circle round bodied needle											
	2xDR 6 		60 blue	C3095669							
	2xDR 6b 	 140µ	45 blue	C3096111							
	DR 6b 	 140µ	45 blue	G3096116							
	2xDR 6b 	 140µ	60 blue	C3096127							
		Long pack	2 x 60 blue	G3096105							
			75 blue	C3096152							
	2xDR 8b 	 	75 60 blue	C3096129	C3096141						
3/8 circle round bodied needle											
	2xDR 10 	 	75 45 blue			C3097615	C3097913				
	DR 10 		75 blue			C3097542					
	2xDR 10 		75 blue			C3097915					
		Long pack	2 x 75 blue			G3097811					
			60 blue	C3097714							
	DR 10 		75 blue		C3097541						
	2xDR 10 		75 blue		C3097914						
		Long pack	2 x 75 blue		G3097810						
			90 blue	C3097799							
	2xDR 13b 		90 blue			C3097840					







































Needle		Thread	USP (metric)							
length mm	diameter microns	length cm colour	8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)
3/8 circle round bodied needle										
	2xDR 10b 	 60  75 blue			C3096123 C3096148					
	DR 10b 	 75 200µ blue			G3096169					
3/8 circle round bodied needle										
	2xDR 10b 	 60  75 blue			C3097816 C3097843					
		 60  75 blue		C3096125 C3096145						
		 2 x 75 blue		G3096108						
	DR 10b 	 75 200µ blue		G3096167						
3/8 circle round bodied needle										
	2xDR 10b 	 45  60  75 blue		C3097164 C3097062 C3097812						
	2xDR 10f 	 75  45  60  75 blue		C3097134 C3097135 C3097136	C3097430					
	2xDR 10fb 	 75 blue		C3097838						
	DR 12 	 75 blue		G3097529						
3/8 circle round bodied needle										
	2xDR 13 	 75 blue					C3095908			
	DR 13 	 75 blue					C3095932			








































Needle		Thread	USP (metric)							
length mm		length cm colour	8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)
3/8 circle round bodied needle										
		45				C3098887				
		60 blue				C3097896				
		75 blue				C3095687				
		75 blue				C3097907				
		75 blue				C3097931				
3/8 circle round bodied needle										
		90 blue				C3095661				
		90				C3097939				
		45 blue			C3098886					
		75 blue			C3095667					
		75 blue			C3097906					
		75 blue			C3098930					
		90			C3097938					
		45		C3098885						
		75 blue		C3097905						
		75				C3097547				
		60			C3097926					
		75			C3097191					
		90 blue			C3097839					
3/8 circle round bodied needle										
		90 blue				C3095021				
		2 x 90 blue				G3095009				
		75 blue			C3097026					
										
3/8 circle round bodied needle										
		90 blue				C3090716	C3090717			
										

































Needle			Thread	USP (metric)							
length mm			length cm colour	8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)
3/8 circle round bodied needle											
			75 blue						C3095057		
			90 blue						C3095921		
			75 blue					C3090120			
			75					C3090720			
			90 blue					C3090920			
			2 x 90 blue					G3090659			
			90 blue					C3095683			
			75 blue				C3090119				
			75				C3090719				
			90 blue				C3090919				
			120 blue					C3095656			
			75					C3090722	C3090723		
			90 blue					C3090822			
			75 blue							C3090725	
			75 blue							C3090132	
3/8 circle round bodied needle											
			75 blue							C3090083	







































Needle		Thread	USP (metric)							
length mm		length cm colour	8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)
3/8 circle round bodied needle										
		60			C3098110					
		45	C3097880							
		60	C3097712							
		75	C3097980							
		blue								
		45	C3097857							
		60	C3097835							
		75	C3097834							
		blue								
		75			C3097886					
		45	C3097685							
		60	C3097888							
		75	C3097885							
		blue								
		2 x 75		G3097080						
		blue								
		75	C3097004							
		blue								
		60		C3097819						
		75	C3097823							
		60	C3097817							
		75	C3097822							
		blue								
		60		C3097088						
		blue								
		2 x 75		G3097130						
		blue								
		60	C3097105							
		blue								
		60	C3097829							
		blue								
1/2 circle round bodied needle										
		60				C3090866				
		75				C3090869				
		blue								
1/2 circle round bodied needle										
		75			C3097402					
		blue								
		75			C3097868					
		75		C3097867						
		blue								

Needle		Thread	USP (metric)							
length mm		length cm colour	8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)
1/2 circle round bodied needle										
	2xHR 10f 	60 blue			C3096015	C3096014				
1/2 circle round bodied needle										
	HR 10f 	75 blue			C3097861					
	2xHR 10f 	2 x 75 blue			G3097858					
1/2 circle round bodied needle										
	2xHR 13 	90 blue					C3090750			
	HR 13 	75 blue				C3090500				
	2xHR 13 	75 45 blue				C3090954 C3090839				
	HR 13 	75 blue			C3090499					
	2xHR 13 	75 45 blue			C3090953 C3090853					
	2xHR 13b 	75 blue			C3095448	C3095449				
	2xHR 13f 	75 blue				C3095124				
	HR 13f 	75 blue				C3095349				
	2xHR 13f 	90 blue				C3095792				
		75 blue			C3097123					

Needle		Thread	USP (metric)							
length mm		length cm colour	8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)
1/2 circle round bodied needle										
2xHR 13ff 	 	75				C3097346				
		75 blue				C3097341				
1/2 circle round bodied needle										
 HR 17 		75 blue						C3090014		
 2xHR 17 		90 blue						C3090903		
 HR 17 		75 blue					C3090013			
 2xHR 17 	   	75 90 blue					C3090503 C3090902			
		90 blue					C3095327			
		120 blue					C3090904			
 HR 17 		75 blue				C3090012				
 2xHR 17 	 	75 90 blue			C3090898	C3090501 C3090901				
 2xHR 17b 		90 blue				C3095492	C3095493	C3095494		
 2xHR 17f 	 	90 blue					C3096001			
		2 x 90 blue				G3095521				
 2xHR 20 		90 blue					C3090338			
 2xHR 22 		90 blue							C3090978	









Needle		Thread	USP (metric)							
length mm		length cm colour	8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)
1/2 circle round bodied needle										
			75 blue					C3090030		
		 	90 75 blue					C3090977 C3090860		
			75 blue					C3090029		
			75					C3090863		
			90 blue					C3090976		
			90 blue					C3090979		
			90 blue					C3095336		
			120					C3090876		
			90 blue				C3090975			
		 	75 90 blue					C3095508 C3095512 C3095513		
		   	75 90 75 90 blue					C3096011 C3096008 C3096009 C3096010		
Needle		Thread	USP (metric)							
length mm		length cm colour	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)	2 (5)	3 (6)
		  	75 120 75 blue				C3090042	C3090043 C3095712		
			90 blue				C3090909			
			120 blue				C3090444			



























Needle length mm	Thread length cm colour	USP (metric)							
		5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)	2 (5)	3 (6)
1/2 circle round bodied needle									
  	120 blue				C3095710				
	  	75 blue			C3090041				
     	75 blue			C3090708					
	90 blue			C3090838					
	90 blue			C3090908					
	120 blue			C3090709					
	  	75 blue		C3090040					
  	75 blue		C3090707						
	  	90 blue		C3090140					
       	90 blue		C3090907						
	90 blue		C3090910						
	90 blue		C3095347						
	120 blue		C3095709						
	75 blue	C3090906							
90 blue	C3090905								
  	90 blue		C3095557	C3095558					

Needle		Thread	USP (metric)							
length mm		length cm colour	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)	2 (5)	3 (6)
1/2 circle round bodied needle										
		  	75			C3096003				
			90		C3095611	C3096017				
			75		C3096004					
			blue							
			90		C3095606	C3095596				
			blue							
		  	75				C3095443	C3095452		
			90					C3095458		
			75			C3095442				
			blue							
			120			C3090959				
			blue							
			75			C3090015				
			blue							
		  	75				C3095444			
			90					C3090449		
			75			C3090032				
			blue							
		  	75				C3090048			
			120				C3090144			
			75			C3090047				
			blue							
			120			C3090462				
			blue							
			75			C3090046				
			blue							
			90			C3090001				
			blue							

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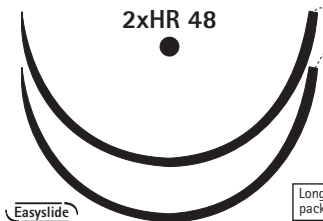

NEEDLE-THREAD COMBINATIONS

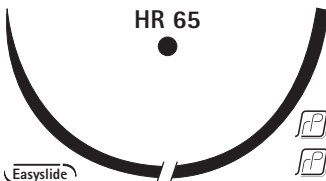









Needle length mm	Thread length cm colour	USP (metric)							
		5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)	2 (5)	3 (6)
1/2 circle round bodied needle									
 HR 30s	75 blue					C3090092			
 HR 30ss	75 blue					C3090094			
 HR 37	75 blue					C3090052			
 2xHR 37	90 blue					C3095054			
 HR 37	75 blue						C3090053		
 2xHR 37	120 blue					C3090973			
 HR 37	75 blue					C3090051			
 2xHR 37	90 120 blue			C3090981		C3090943			






















Needle length mm	Thread length cm colour	USP (metric)								
		5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)	2 (5)	3 (6)	
1/2 circle round bodied needle										
 HR 37  	75 blue			C3090050						
 2xHR 37   	90 blue			C3090942						
	2 x 90 blue			G3095727						
 HR 37s  	75 120 blue				C3090151 C3090154	C3090152	C3090153			
 2xHR 37s  	120 blue			C3090971	C3090972					
 HR 37s  	75 blue			C3090150						
 HR 40  	100 blue					C3090099	C3090100			
 HR 40s  	75 100 blue					C3090199	C3090300			
 HR 40s   	150 blue						B3090331			











































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NEEDLE-THREAD COMBINATIONS
























Needle		Thread	USP (metric)							
length mm		length cm colour	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)	2 (5)	3 (6)
1/2 circle round bodied needle										
 HR 40s		75 90 blue						C3090200	C3090478	
 HR 48		75 120 blue					C3095445	C3095146		
 HR 48		150 blue						B3095081		
 HR 48		75 blue						C3090170		
 2xHR 48		120 blue				G3090932				
Needle		Thread	USP (metric)							
length mm		length cm colour	9/0 (0.3)	8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)
1/2 circle round bodied needle										
 2xHR 6		45 45 blue			C3097803	G3097804				






















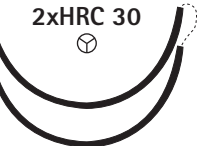


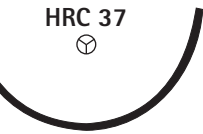






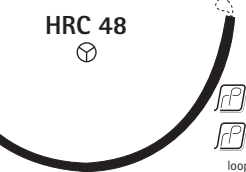


Needle length mm	Thread length cm colour	USP (metric)							
		5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)	2 (5)	3 (6)
1/2 circle round bodied needle									
	120						B3090485		
	150 blue							B3095585	
5/8 circle round bodied needle									
	75 blue					C3090066			
	75 blue				C3095360				
Straight round bodied needle									
	30 blue		C3090776						
	45 blue	C3090466							
	75 blue				C3095350	C3095351			
3/8 circle round bodied needle with short cutting point									
	90 blue	C3097930							
Needle length mm	Thread length cm colour	USP (metric)							
		8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)
	45			C3097553					
	60 blue			C3097543					
	75 blue			C3097539					
	75			C3097546					
	45		C3097548						
	60 blue		C3097544						
	75 blue		C3095697						
	75 blue		C3097538						































Needle		Thread	USP (metric)							
length mm		length cm colour	8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)
3/8 circle round bodied needle with short cutting point										
2xDRC 10		75 blue		C3097545						
2xDRC 10b		75 blue		C3097516						
2xDRC 10s		75 blue		C3097324						
2xDRC 13		75				C3095671	C3096165			
		75 blue				C3097141				
		75 blue								
DRC 13		75 blue				C3097145				
2xDRC 13		90 blue				C3097171				
		75 blue			C3095673					
DRC 13		75 blue			C3097144					
2xDRC 13		75			C3097175					
		90			C3097305					
		90 blue		C3098303						
2xDRC 13b		75				C3097315				
		90				C3097311				
		75 blue			C3097836					
		90 blue			C3096013					
2xDRC 13s		75 blue				C3095334				
2xDRC 15		75				C3095756				
		90 blue				C3090728				
DRC 18		75 blue						C3095166		

Needle		Thread	USP (metric)							
length mm		length cm colour	8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)
3/8 circle round bodied needle with short cutting point										
	2xDRC 18 	 90 blue						C3090527		
	DRC 18 	 75 blue					C3095165			
	2xDRC 18 	 75  90 blue					C3095195 C3090526			
	DRC 18 	 30 blue loop					C3095456			
	DRC 18 	 75 blue				C3095164				
	2xDRC 18 	 90  75 blue				C3090525 C3095194				
	2xDRC 18b 	 90 blue					C3095439			
	2xDRC 22 	 90  120 blue					C3090535 C3095564	C3090536		
	2xDRC 26 	 120  90  120  75 blue						C3095633 C3095632 C3095634	C3095612	
	DRC 26 	 75 blue						C3095645		
	2xDRC 26 	 75  90 blue					C3095631 C3095630			
	2xDRC 6 	 45 blue		C3097219						

Needle		Thread	USP (metric)							
length mm		length cm colour	8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)
3/8 circle round bodied needle										
2xDR 6		75 blue		C3097286						
3/8 circle round bodied needle with short cutting point										
2xDRC 6		75 75 blue	C3097272	C3097288						
2xDRC 8		60 60 75 60 75 blue	C3097025 C3097169	C3097046 C3097176	C3097172					
2xDRC 8b		60 blue		C3097008						
1/2 circle round bodied needle with short cutting point										
2xHRC 10		 2 x 60 blue		G3097793						
2xHRC 13		75 75 blue			C3097039	C3097303				
2xHRC 17		90 blue						C3090800	C3095052	
HRC 17		75 blue					C3090561	C3090579		
2xHRC 17		90 blue					C3090571			
2xHRC 17		90 blue					C3095367			
2xHRC 17		 2 x 90 blue					G3095169			
2xHRC 17		90 blue					C3095638			
HRC 17		75 blue				C3090560				


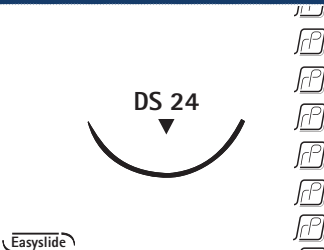
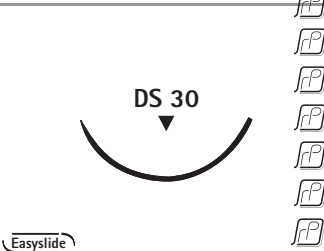

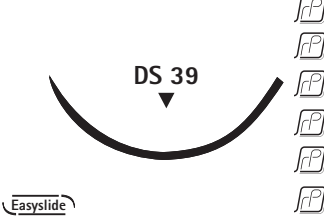


Needle		Thread	USP (metric)							
length mm		length cm colour	8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)
1/2 circle round bodied needle with short cutting point										
	2xHRC 17		75			C3090695				
			90 blue			C3090570				
	2xHRC 17b		90 blue			C3095580	C3095581			
	HRC 22		75 blue					C3090566	C3095572	
	2xHRC 22		90 blue				C3090580	C3090581		
	HRC 22		75 blue				C3090565			
	2xHRC 22		2 x 90 blue				G3095162			
	2xHRC 22b		90 blue				C3095592			
Needle		Thread	USP (metric)							
length mm		length cm colour	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)	2 (5)	3 (6)
	HRC 26		75 blue			C3090474	C3095796			
	2xHRC 26		90			C3095825				
			120			C3095140				
			90 blue			C3095614				
	HRC 26		75 blue		C3090473					














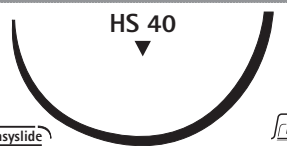














Needle length mm	Thread length cm colour	USP (metric)								
		5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)	2 (5)	3 (6)	
1/2 circle round bodied needle with short cutting point										
 	     	75 90 120 90 90 120 blue			C3090808 C3090812 C3090820 C3095637 C3090811 C3095771					
	 		75 blue		C3090472					
	 		75 blue	C3090806						
	 	   	90 120 90 blue		C3095608 C3095597 C3095607					
	 		90 blue			C3090584 C3090585				
	 		100 blue				C3095411			
 	 	90 120 blue			C3095533 C3095562					
	 	  loop blue	150 200 blue				B3095457 B3095450			











































Needle		Thread	USP (metric)							
length mm		length cm colour	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)
Progressive curved round bodied needle with short cutting point										
2xPRC 10		 2 x 75 blue	G3097053							
2xPRC 13		 75 blue		C3097097						
2xPRC 13b		 75 blue		C3097701						
Hook round bodied needle with short cutting point										
JRC 30s		 100 blue							C3090963	
3/8 circle reverse cutting needle										
DS 12		  45  75  blue		C3090206 C3095543	C3090207	C3090208	C3090205			
DS 16		  45  75  45  75  45  blue		C3090211	C3090212 C3090512	C3090213 C3090513	C3090214 C3090514			
DS 19		  45  75  30  45  75  30  45 75 45 blue		C3095400	C3090219 C3090519	C3090420 C3090220 C3090520	C3090421 C3090221 C3090521	C3090222 C3095522		































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Needle length mm	Thread length cm colour	USP (metric)							
		7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)
3/8 circle reverse cutting needle									
	75 blue								C3090237
Needle length mm	Thread length cm colour	USP (metric)							
		4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)	2 (5)	3 (6)	4 (6)
	75	C3090434 C3090234	C3090435 C3090235	C3090436 C3090236		C3090238			
	45								
	75								
	45								
	75								
	45								
	75								
	blue								
	75	C3090445 C3090245	C3090446 C3090246	C3090447 C3090247	C3090248	C3095200			
	45								
	75								
	45								
	75								
	45								
	75								
	blue								
	75 blue	C3090230							
	75	C3090254 C3090020	C3090254 C3090020	C3090249 C3090255	C3090256	C3090257 C3095488	C3090244		
	90								
	75								
	100								
	75								
	90								
	blue								
	75 blue			B3090751					
Needle length mm	Thread length cm colour	USP (metric)							
		6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)	2 (5)
	45 blue	C3090204							

Needle		Thread	USP (metric)							
length mm		length cm colour	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)	2 (5)
1/2 circle reverse cutting needle										
	HS 18	 45 blue		C3090264						
	HS 21	 45  75 blue				C3090261 C3090461				
	HS 26	 75  120  75 blue				C3090269	G3095959 C3090270	C3090271		
	HS 30	 75 blue				C3090274	C3090275			
	HS 37	 75 blue					C3090279			
	HS 40	 100 blue						C3095912	C3090272	
Straight reverse cutting needle										
	GS 13	 45 blue			C3095385					
	GS 51	 75 blue					C3090285			
	GS 60	 75 blue				C3090265	C3090266			
3/8 circle Trapezoidal micro engraved with precision point										
	DGMP 11	 45 blue	C3095588							
	DGMP 13	 45 blue	C3095589	C3095518	C3095910					
	DGMP 16	 75  45 blue		C3095549	C3095499	C3095999				

Needle		Thread	USP (metric)							
length mm		length cm colour	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)	2 (5)
3/8 circle Trapezoidal micro engraved with precision point										
 DGMP 19		45				C3095591				
		75				C3095983				
		45								
		75								
		45								
		blue		C3095550	C3095500 C3095517					
 DGMP 24		45				C3095706				
		75				C3095708				
		45								
		75								
		blue								
										
3/8 circle reverse cutting needle with precision point										
	 DSMP 7		45 blue	C3095613						
Needle		Thread	USP (metric)							
length mm		length cm colour	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)
	 DSMP 7		45 blue	C3090612						
	 DSMP 11		45	C3090606	C3090607	C3090608				
			75 blue	C3090406						
	 DSMP 13		45				C3090620	C3090077		
			75				C3090410			
			45 blue				C3090619			
	 DSMP 19		75 blue			C3090672				
	 DSMP 13		45 blue	C3090617	C3090618					
	 DSMP 16		45				C3090630	C3090481		
			75				C3090427			
			45							
			75							
			45							
			75 blue				C3090628 C3090428	C3090629 C3090429		

Needle			Thread	USP (metric)							
length mm			length cm colour	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)
3/8 circle reverse cutting needle with precision point											
 DSMP 19 	    	45						C3090677 C3090674	C3090678		
		75									
		45									
		75									
		45			C3090675						
		blue									
 DSMP 24 	      	45							C3090657 C3090682		
		75									
		45									
		75									
		45									
		75									
		45			C3095654						
		blue									
 DSMP 30 	 	45								C3090667	
		75							C3090691	C3090692	
		blue									
Needle			Thread	USP (metric)							
angle	length mm	diameter microns	length cm colour	11/0 (0.1)	10/0 (0.2)	9/0 (0.3)	8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)
3/8 circle round bodied needle micro needle											
135°	 DRm 5		15			G3090782					
			23			G3090024					
		100µ	blue								
135°	 2xDRm 5	100µ	45 blue			G3090482					
135°	 DRm 6		45				G3090883				
		140µ	blue								
135°	 2xDRm 6	140µ	60 blue				G3090609				
135°	 DRm 6	 140µ	12 blue				G3095307				
			15 blue			G3090783					
135°	 DRm 8	 140µ	15 45 blue				G3090753 G3090025				
135°	 2xDRm 8	 140µ	60 blue				G3090758				

angle	Needle		Thread	USP (metric)							
	length mm	diameter microns	length cm colour	11/0 (0.1)	10/0 (0.2)	9/0 (0.3)	8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)
3/8 circle round bodied needle micro needle											
135°	DRm 10b 	 200µ	75 blue						G3090785		
135°	2xDRm 10b 	 200µ	45 blue					G3090610			
135°	DRm 10b 	 200µ	75 blue					G3090784			
1/2 circle round bodied needle micro needle											
180°	2xHRm 6 	 200µ	45 blue					G3090742			
180°	HRm 6 	 200µ	30 blue					G3090740			
3/8 circle round bodied needle with taper point (vascular)											
	2xDRmV 8b 	 Long pack 140µ	60 75 blue				G3095050 G3095060				
	2xDRmV 10b 	 200µ	75 blue						G3095139		
3/8 circle round bodied needle micro needle											
	2xDRm 10b 	 200µ	45 blue						G3095149		
3/8 circle round bodied needle with short cutting point (mic)											
135°	2xDRCm 10b 	 200µ	75 blue						G3090693		
135°	DRCm 10b 	 200µ	75 blue						G3090768		
135°	2xDRCm 10b 	 200µ	45 75 blue					G3090832 G3090694			
Progressive curved round bodied needle with short cutting point (mic)											
95°/ 90°	PRCm 10b 	 200µ	75 blue					G3095765			

Needle		Thread	USP (metric)							
length mm	diameter microns	length cm colour	11/0 (0.1)	10/0 (0.2)	9/0 (0.3)	8/0 (0.4)	7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)
Progressive curved round bodied needle with short cutting point (vas)										
2xPRCmV 10b  	200µ	75 blue					G3090669	G3090668		
3/8 circle lancet micro needle										
2xDLm 5 	150µ	30 blue		G3090589						
140°										
DLm 6 	150µ	15 blue		G3090590						
140°										
2xDLm 6 	150µ	30 blue		G3090591						
140°										
2xDLm 6s 	200µ	30 blue		G3090596						
137°										
DLm 6s 	200µ	15 blue			G3090594	G3090595				
137°										
2xDLm 6s 	200µ	15 30 blue			G3090846 G3090597					
137°										
1/2 circle lancet micro needle										
2xHLm 6 	150µ	30 blue		G3090775						
160°										
Straight lancet micro needle										
2xGLm 16 	150µ	23 blue		G3095480	G3095481					
1/8 circle lancet micro needle										
SLm 6 	150µ	8 blue		G3090777	G3090778					
44°										

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