



MonoPlus[®]

THE LONG-TERM OPTION FOR SLOW HEALING

Synthetic long-term absorbable monofilament suture
made of polydioxanone

MonoPlus®

THE LONG-TERM OPTION FOR SLOW HEALING



A COMPLETE RANGE OF BENEFITS

B. Braun offers a comprehensive synthetic absorbable monofilament portfolio that provides solutions according to surgeon's requirements for the different surgical layers:

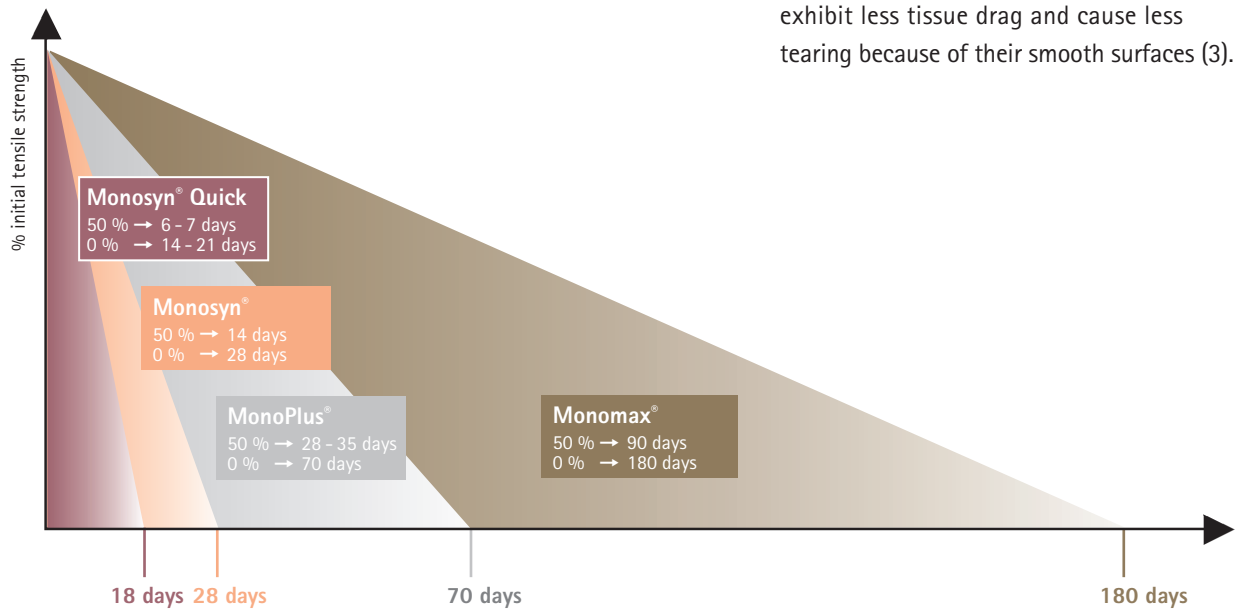


Figure 1: Tensile strength retention of the B. Braun synthetic monofilament sutures

Monosyn® Quick: Short term absorbable suture for fast healing tissues.

Monosyn®: Mid term absorbable suture for soft tissue approximation.

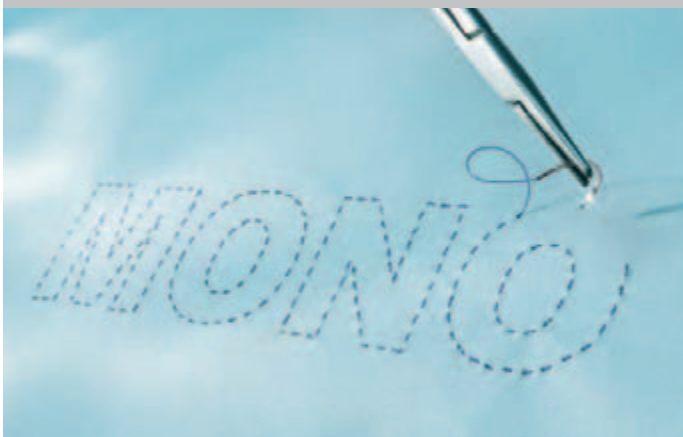
MonoPlus®: Long term absorbable suture designed for slow healing tissues.

Monomax®: Extra long term absorbable suture specially engineered for abdominal wall closure.

THE MONOFILAMENT ADVANTAGE

The main advantages of using monofilament sutures:

- ▮ The monofilament sutures appear to have the lowest infection promoting effects (1, 2).
- ▮ Compared with braided multifilament sutures, absorbable monofilaments exhibit less tissue drag and cause less tearing because of their smooth surfaces (3).



MonoPlus®

THE LONG-TERM OPTION FOR SLOW HEALING

Easyslide

Easyblack
NEEDLES

Available with Easyslide and Easyblack needles.



RacePack® Packaging coming soon.

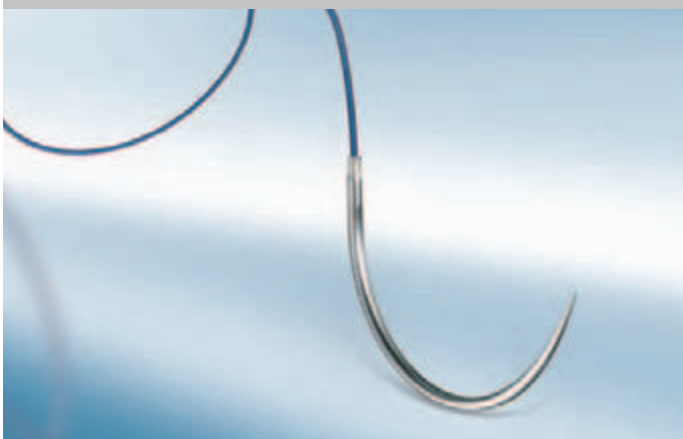
THE BENEFITS OF MonoPlus®

- ▮ Prolonged tensile strength retention (50 % to 70 % of tensile strength retained at 28 days) (4, 5).
- ▮ Negligible infection promoting effect (7, 8).
- ▮ MonoPlus® degradation profile designed to an extended wound support of more than 4 weeks (5, 6).
- ▮ MonoPlus® degradation profile designed to an extended wound support (5).

INDICATIONS (6)

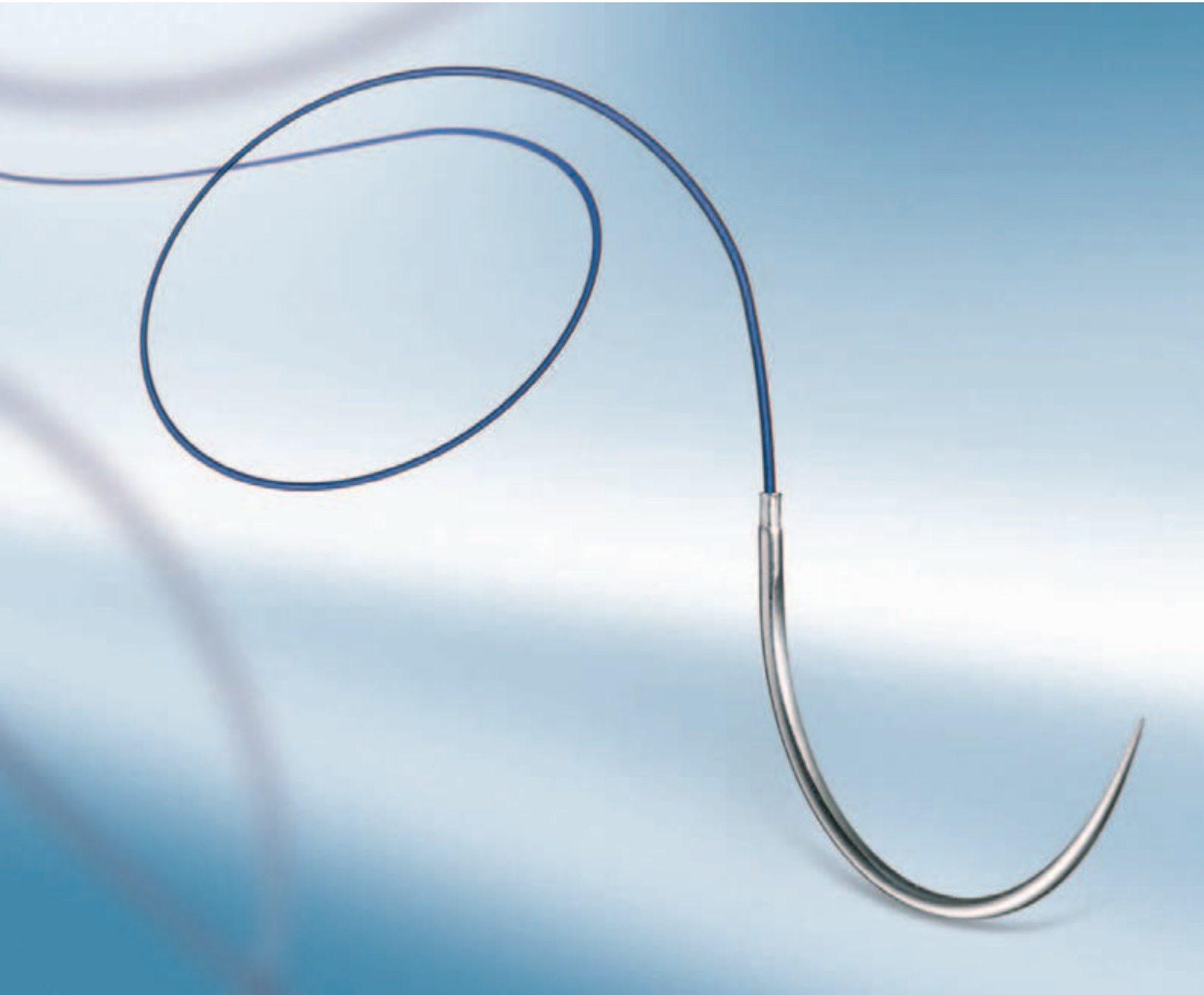
MonoPlus® is indicated for use in general **soft tissue approximation**:

- ▮ Specially in cases where an extended wound support of more than 4 weeks is desirable.
- ▮ Paediatric cardiovascular surgery.
- ▮ For the suturing of autologous peripheral vessels.



MonoPlus®

THE LONG-TERM OPTION FOR SLOW HEALING



PRODUCT OVERVIEW





























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















Structure	Monofilament
Colour	Violet
Chemical composition	Polydioxanone
Sizes	USP 2 (metric 5) - 7/0 (metric 0.5)
Knot tensile strength retention	28 days postimplantation
Mass absorption	Degradation by hydrolysis within 180 - 210 days
Sterilisation	Ethylene oxide



MonoPlus®

























NEEDLE-THREAD COMBINATIONS

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 round bodied needle									
 2xDR 8 	45 violet			C0024714					
 DR 10 	45 70 violet	C0024981 C0024501							
 DR 10b 	70 violet	C0024010							
 2xDR 10 	45 70 violet	C0024801	C0024982 C0024802						
 DR 12 	45 70 violet	C0024911	C0024512	C0024513	C0024514				
 2xDR 12 	70 violet		C0024812	C0024813	C0024814				
 DR 13b 	70 violet			C0024008					
 2xDR 13b 	70 violet				C0024224				
 DR 15 	70 violet			C0024523	C0024524	C0024525			
 2xDR 15 	70 violet			C0024823	C0024824	C0024825			
 DR 18 	70 violet		C0024532	C0024533	C0024534				
 DR 18 	40 violet					C0024529			
 2xDR 18 	70 violet			C0024833	C0024834				
 DR 22 	70 violet				C0024537	C0024527			

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 round bodied needle									
 2xDR 22 	70 violet				C0024837				
 DR 26 	70 violet						C0024989		
1/2 circle round bodied needle									
 2xHR 6 	70 violet	C0024005							
 2xHR 10 	70 violet		C0024843						
 2xHR 13ff 	70 violet			C0024847					
 HR 13 	45 70 4 x 70 violet		C0024902 C0024002	C0024903 C0024003 C0024807	C0024904 C0024004				
 2xHR 13 	70 violet		C0024602	C0024603					
 HR 13ss 	70 violet					C0024205	C0024206	C0024207	
 HR 17 	45 70 90 violet		C0024012	C0024013	C0024889 C0024014 C0024424	C0024015			
 HR 17b 	70 4 x 70 violet			C0024515 C0024516	C0024521				
 HR 17 	4 x 70 violet			C0024009					
 2xHR 17 	70 90 violet			C0024613 C0024443	C0024614 C0024444				

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NEEDLE-THREAD COMBINATIONS



















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)
1/2 circle round bodied needle									
 HR 17s 	70 violet					C0024129	C0024131	C0024132	
 HR 20 	70 violet				C0024679	C0024680			
 HR 22 	70 4 x 70 violet			C0024133	C0024134 C0024707	C0024135	C0024136		
 HR 22b 	70 4 x 70 violet				C0024522 C0024526	C0024530			
 HR 22  take off	4 x 45 4 x 70 violet				C0024764 C0024708	C0024765			
 2xHR 22 	70 90 violet				C0024634 C0024238	C0024635 C0024239			
 2xHR 22b 	75 violet				C0024531				
 HR 22s 	70 violet					C0024145	C0024146	C0024147	
 HR 26 	70 90 violet			C0024433	C0024024 C0024434	C0024025 C0024435	C0024026 C0024436	C0024027	
 HR 26b 	4 x 45 70 violet				C0024547	C0024550 C0024548	C0024551		
 HR 26  take off	4 x 45 4 x 70 violet				C0024774 C0024724	C0024775 C0024725	C0024776		
 2xHR 26 	30 70 90 120 violet				C0024199 C0024624 C0024437	C0024625 C0024438 C0024620	C0024626 C0024441		

C Box of 36 units

B Box of 24 units











G Box of 12 units

M Box of 6 units

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)
1/2 circle round bodied needle									
 HR 26s 	70 90 violet					C0024085	C0024086 C0024143	C0024087	C0024088 C0024080
 HR 30 	70 90 violet				C0024034 C0024439	C0024035 C0024440	C0024036	C0024037	C0024038
 HR 30  loop	150 violet						C0024968		
 2xHR 30 	90 violet					C0024945			
 HR 37 	70 90 violet				C0024044	C0024045	C0024046	C0024447	C0024448
 2xHR 37 	70 90 violet				C0024644	C0024639	C0024646		
 HR 37s 	70 90 violet					C0024055 C0024450	C0024056	C0024057 C0024452	C0024058 C0024453
 HR 40 	70 90 violet					C0024040			C0024458
 HR 40s 	70 90 violet						C0024066 C0024466	C0024067 C0024467	C0024068 C0024468

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NEEDLE-THREAD COMBINATIONS

























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)
1/2 circle round bodied needle									
 HR 40s <small>Easyslide</small>	70 90 violet						C0024066 C0024466	C0024067 C0024467	C0024068 C0024468
 HR 43s <small>Easyslide</small>	90 violet							C0024401	C0024402
 HR 48 <small>Easyslide</small>	70 90 violet						C0024063		C0024078
5/8 circle round bodied needle									
 FR 26 <small>Easyslide</small>	70 violet					C0024571		C0024092	C0024111
 2xFR 26 <small>Easyslide</small>	70 90 violet					C0024835	C0024836 C0024936	C0024937	
 FR 26s <small>Easyslide</small>	70 violet								C0024110
 2xFR 36 <small>Easyslide</small>	90 violet						C0024780		
Straight round bodied needle									
 GR 19 <small>Easyslide</small>	30 120 violet					C0024247	C0024245 C0024253		
 GR 19b <small>Easyslide</small>	20 violet					C0024573			
 GR 19 <small>Easyslide</small> loop	40 violet					C0024240	C0024241		

C Box of 36 units

B Box of 24 units





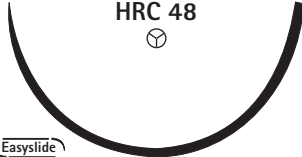















G Box of 12 units

M Box of 6 units

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)
Straight round bodied needle									
 2xGR 19 	45 violet				C0024984	C0024985			
 2xGR 65 	70 violet					C0024895	C0024896	C0024897	C0024898
Hook round bodied needle									
 JR 30s 	120 violet						C0024169	C0024170	
Ski Needle round bodied needle									
 SKR 26 	30 120 violet				C0024651 C0024649	C0024661	C0024664		
 SKR 26b 	20 violet					C0024572			
 SKR 26  loop	40 violet				C0024650	C0024606			
3/8 circle round bodied needle with short cutting point									
 2xDRC 8 	70 violet	C0024213							
 DRC 10 	70 violet	C0024221	C0024222						
 2xDRC 10 	70 violet	C0024721	C0024722						
 DRC 12 	70 violet		C0024232	C0024233					
 2xDRC 12 	70 violet		C0024732	C0024733					
 DRC 18 	70 violet			C0024243					

MonoPlus®

NEEDLE-THREAD COMBINATIONS




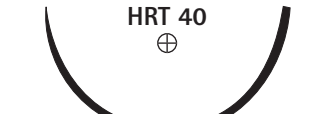

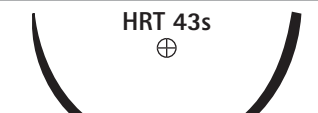
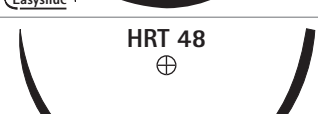


Needle length mm	Thread length cm colour	USP (metric)							
		7/0 (0.5)	6/0 (0.7)	5/0 (1)	4/0 (1.5)	3/0 (2)	2/0 (3)	0 (3.5)	1 (4)
1/2 circle round bodied needle with short cutting point									
 2xHRC 17 	90 violet				C0024011				
 HRC 26 	70 violet				C0024498				
 HRC 48 	90 violet								C0024261
Progressive curved round bodied needle with short cutting point									
 PRC 24 	120 violet						C0024850		
Hook round bodied needle with short cutting point									
 JRC 30s 	70 violet							C0024168	C0024928
1/2 circle round bodied needle with trocar point									
 HRT 13 	70 violet				C0024282				
 HRT 17 	70 violet			C0024283	C0024284	C0024285	C0024286		
 HRT 22 	70 violet				C0024294	C0024295			
 HRT 26 	70 violet				C0024304	C0024305	C0024306	C0024307	
 2xHRT 26 	70 90 violet					C0024605 C0024601			

C Box of 36 units

B Box of 24 units




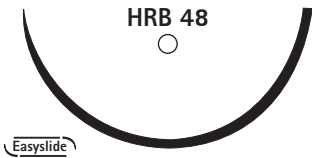
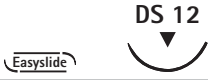
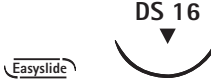




G Box of 12 units

M Box of 6 units

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)
1/2 circle round bodied needle with trocar point									
	70 violet							C0024311	
	70 90 violet							C0024316	C0024517 C0024518
	70 90 violet							C0024321	C0024322 C0024818 C0024323
	90 violet								C0024543
	90 violet								C0024545 C0024546
	90 violet								C0024352 C0024353
	90 violet								C0024332 C0024333
1/2 circle round bodied needle with blunt point									
	70 violet						C0024050		
	90 violet								C0024404

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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)	
1/2 circle round bodied needle with blunt point										
 HRN 45	90 violet									C0024406
 HRN 50	90 violet									C0024408
1/2 circle round bodied needle with protection point										
 HRB 37s	90 violet									C0024462
 HRB 48	90 violet									C0024881
3/8 circle reverse cutting needle										
 DS 12	45 violet					C0024193				
 DS 16	45 70 violet				C0024535	C0024906 C0024539				
 DS 19	45 70 violet				C0024081 C0024175	C0024909 C0024536	C0024102 C0024519			
 DS 24	45 70 violet					C0024541	C0024101 C0024520	C0024990		
 DS 30	70 violet						C0024991	C0024992	C0024598	
 DS 39	90 violet									C0024538

C Box of 36 units

B Box of 24 units

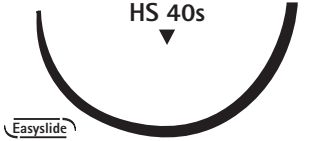
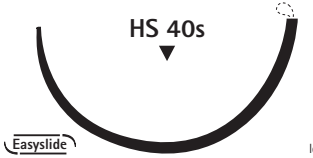
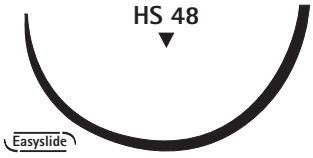
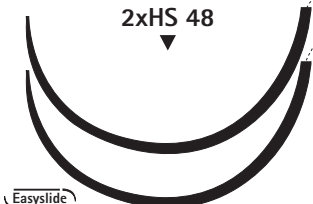






G Box of 12 units

M Box of 6 units

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									
 2xDS 39 Easyslide	45 violet						C0024976		
1/2 circle reverse cutting needle									
 HS 15 Easyslide	70 violet			C0024179					
 HS 18 Easyslide	70 violet				C0024730				
 HS 23 Easyslide	70 violet					C0024190			
 HS 23ss Easyslide	70 violet								C0024108
 HS 26s Easyslide	70 90 120 violet					C0024185 C0024019 C0024023	C0024186 C0024017 C0024028	C0024187 C0024018 C0024021	C0024188
 HS 30 Easyslide	70 violet						C0024184	C0024195	
 HS 37 Easyslide	90 violet						C0024104	C0024105	C0024106
 HS 37s Easyslide	70 90 120 violet						C0024156 C0024114	C0024157 C0024115 C0024022	C0024158 C0024116 C0024031
 HS 40 Easyslide	90 violet							C0024117	C0024118











MonoPlus®

NEEDLE-THREAD COMBINATIONS

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)
1/2 circle reverse cutting needle									
	70 90 violet					C0024121	C0024122		C0024560
	150 violet					C0024966			
	70 90 violet						C0024127	C0024202 C0024128	
	90 violet							C0024630	
Straight reverse cutting needle									
	45 violet			C0024994	C0024995				
	70 violet			C0024540	C0024189				
	70 violet				C0024861				
3/8 circle reverse cutting needle with precision point									
	45 violet	C0024176	C0024177						
	45 violet	C0024407	C0024916	C0024908					
	45 violet		C0024194	C0024970					

C Box of 36 units B Box of 24 units G Box of 12 units M Box of 6 units

REFERENCES

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)
3/8 circle reverse cutting needle with precision point									
 DSMP 13 	45 violet	C0024407	C0024916	C0024908					
 DSMP 16 	45 violet		C0024194	C0024970					
 DSMP 19 	45 70 violet		C0024901	C0024907	C0024109 C0024151	C0024965			
 DSMP 24 	45 70 violet			C0024910 C0024983	C0024103 C0024986	C0024112 C0024988			
1/2 circle reverse cutting needle with precision point									
 HSMP 15 	45 violet			C0024921					

- (1) Mangram AJ, Horan TC, Pearson ML, Silver LC, Jarvis WR. Guideline for prevention of surgical site infection 1999. Hospital Infection Control Practices Advisory Committee. Infect Control Hosp Epidemiol. 1999;20(4):250-78.
- (2) Choi HJ, Chae HD. Comparison of E. Coli infiltration between new synthetic absorbable sutures. J Korean Surg Soc. 2009;77(1):1-6.
- (3) Im JN, Kim KJ, Kim HK, Lee KY, Park WH. Characteristics of Novel Monofilament Sutures Prepared by Conjugate Spinning. 2007;83(2):499-504.
- (4) Hayes M. Practical skin cancer surgery. Chatswood, NSM: Elsevier Australia; 2014.
- (5) Data on file Evaluation of Knot Pull Tensile Strength Degradation after subcutaneous Implantation carried out by NAMSA on behalf of AAG.
- (6) IFU MonoPlus®.
- (7) Data on file Acute Intracutaneous reactivity_Lab n°99C2043100.
- (8) Data on file Evaluation of suture Absorption and Degradation Following Muscle Fascia Implantation carried out by NAMSA on behalf of AAG.

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