



Value Life

Vascular Access  
Chlorhexidine-Free Central Venous Catheters



Choose your catheter with  
care and confidence

# What would you do

if your patient had a severe anaphylactic reaction to a chlorhexidine impregnated central line?

Choose your catheter with **confidence**

## Medical Device Alert: MDA/2012/048

A recent medical device alert from the MHRA stated:



Risk of severe anaphylactic reaction if central venous or haemodialysis catheters including chlorhexidine or silver sulfadiazine are used in patients with an allergy to chlorhexidine, silver sulfadiazine and/or sulfa drugs.<sup>1</sup>

Choose your catheter with **care**

Vygon offers a wide range of central venous catheters (CVCs) that provide safe and reliable vascular access. This range of catheters is intended for use in patients who require short-term acute IV therapy.

### You can now choose from the following:

- A selection of catheter lengths 12.5cm – 30cm
- A selection of lumen configurations 2 – 7
- VYSET® custom packs
- New sharp-safe products
- Antimicrobial and antibiotic technologies
- Bloodless systems.



# Recommendations from Global Opinion Leaders

## Recommendations for all

**Russell:** Use the most appropriate length for the patient and access point to reduce the risk of migration, infection and the tip being intra-cardiac.<sup>2</sup>

**EU Sharps Directive:** Use safer sharps (incorporating protection mechanisms) – regulation 5(1)(b) The employer must substitute traditional, unprotected medical sharps with a ‘safer sharp’ where it is reasonably practicable to do so.<sup>3</sup>

**epic3:** Use the most appropriate number of lumen required for the therapy. Multilumen catheters do not increase risk for Catheter-related bloodstream infections (CRBSIs) or local catheter colonisation compared with single lumen CVC.<sup>4</sup>

**epic3:** Maximal sterile barrier precautions for the insertion of central venous catheters reduces the risk of infection.

## Multistar+

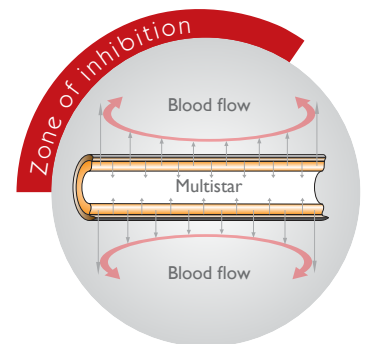
For use with particularly vulnerable patients including: Burns, ITU long-term patients and re-admissions, Extracorporeal membrane oxygenation (ECMO) and Ventricular Assist Device (VAD) patients.

**epic3:** A collaborative network meta-analysis of CVC use in adults indicated that Rifampicin-based impregnated CVC was the only type of impregnated/coated CVC that reduced catheter colonisation and CRBSI compared with standard CVC.

**Schierholz:** Catheter segments coated with miconazole-rifampicin demonstrated a broad spectrum of activity against bacteria.<sup>5</sup>

**Rump:** Antibiotic resistance is unlikely, as a pharmacokinetic analysis concluded that the maximum systemic antibiotic concentration which can be caused by the catheter is 10% below the minimal inhibiting concentration, and so can build absolutely no resistance pressure.<sup>6</sup>

**Lorente:** Rifampicin-miconazole-impregnated catheters are associated with a statistically significant reduction in the incidence of catheter-related bacteremia in patients with a short-term catheter use at central jugular or femoral sites.<sup>7</sup>



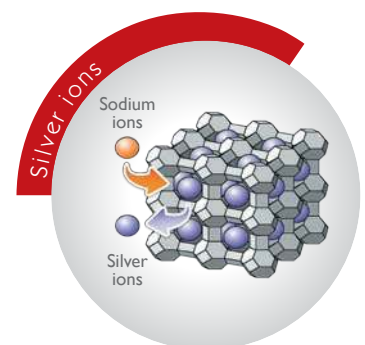
## Multicath Expert

For use with critical care patients.

**Khare:** Tip colonisation was significantly lower in the silver zeolite-impregnated catheter tips (58%) as compared with the control tips (73%) ( $p < 0.025$ ).<sup>8</sup>

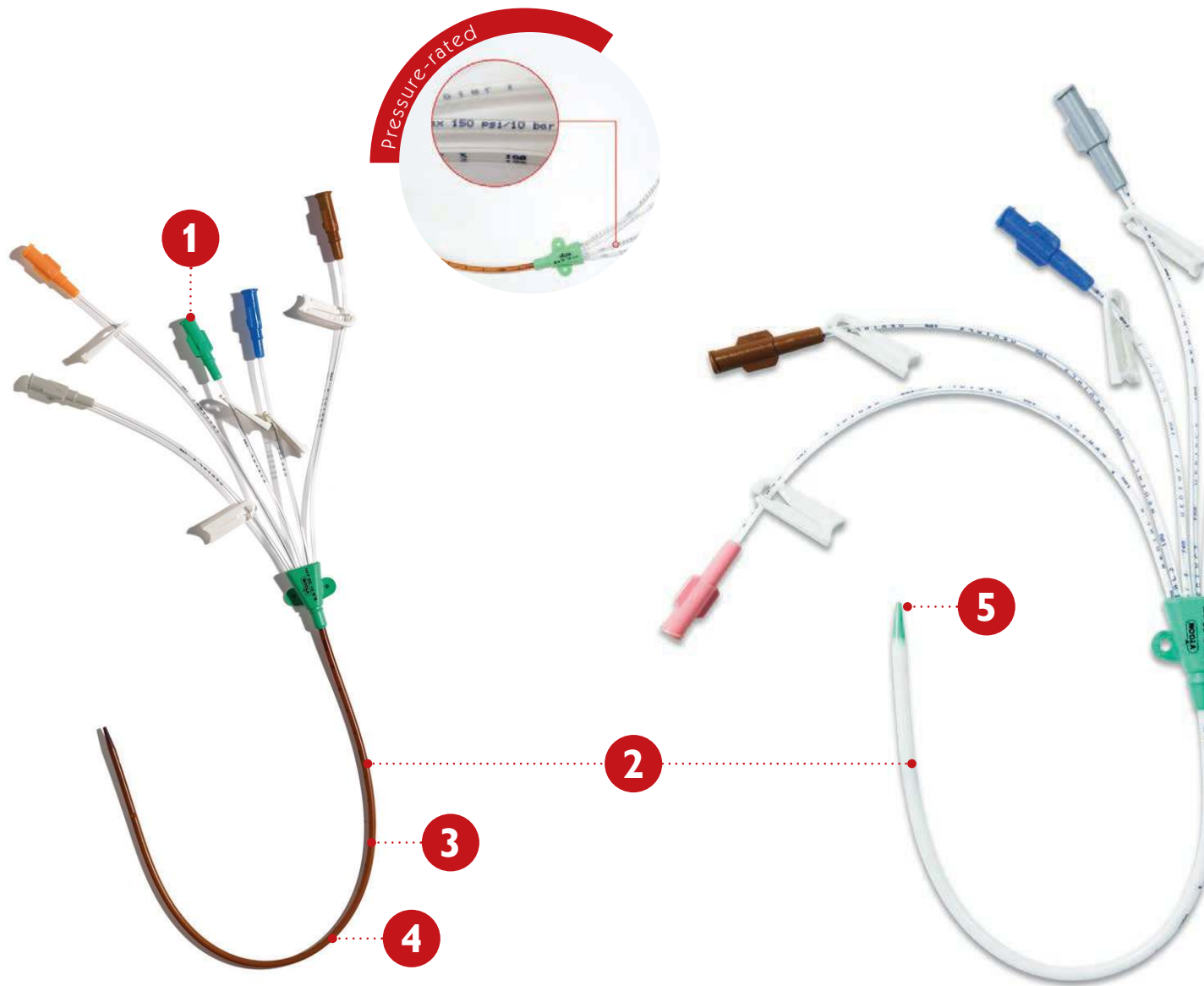
**epic3:** Use an antimicrobial-impregnated central venous access device for adult patients where the central venous catheter is expected to remain in place for >5 days.

**epic3:** Be aware of patient sensitivity to chlorhexidine gluconate and the associated risks for an anaphylactic reaction to chlorhexidine. Risk of severe anaphylactic reaction if central venous or haemodialysis catheters including chlorhexidine or silver sulphadiazine are used in patients with an allergy to chlorhexidine, silver sulfadiazine and/or sulfa drugs.<sup>9</sup>



## Multicath Forward

For use with elective theatre patients.



## Multicath Expert

Silver Ion Impregnated

## Multicath

Non-impregnated

### 1 Pressure-rated

Green distal lumen is now pressure-rated to 150 PSI, 10 bar.

### 2 Long lasting

Effective up to 30 days reducing catheter exchanges for long-term ITU patients.

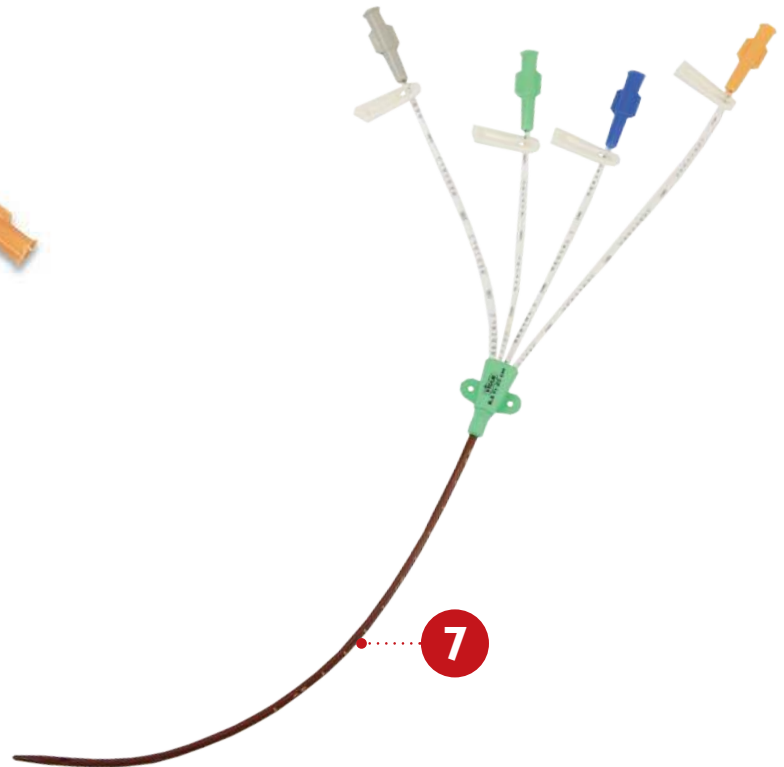
### 3 12.5cm quin lumen Multicath Expert

Allows full catheter insertion, reducing the risk of catheter migration, infection and erosion, or perforation associated with intra-cardiac placement.

### Unique bloodless valve

The valve connects to the puncture needle and **reduces the risk** of blood loss and air embolism.





## Forward

Designated PUR

## Multistar+

Antibiotic Incorporated

### 4 Length logic

It has been reported that placing right-sided CVCs to a maximum of 13cm virtually eliminates the risk of the catheter tip being intra-cardiac.<sup>2</sup>

### 5 Atraumatic tip

Soft, flexible design allows smooth transition over the guidewire whilst reducing the potential for internal vessel trauma.

### 6 Guidewire technology

Anti-kink teflon coated guidewire.

### How does Multistar work?

Watch the inventor of Multistar **Dr. Jörg Schierholz PD** explain how it works.



### 7 Multistar antibiotic technology

Releases rifampicin and miconazole on both inner and outer surfaces at a slow, steady rate.

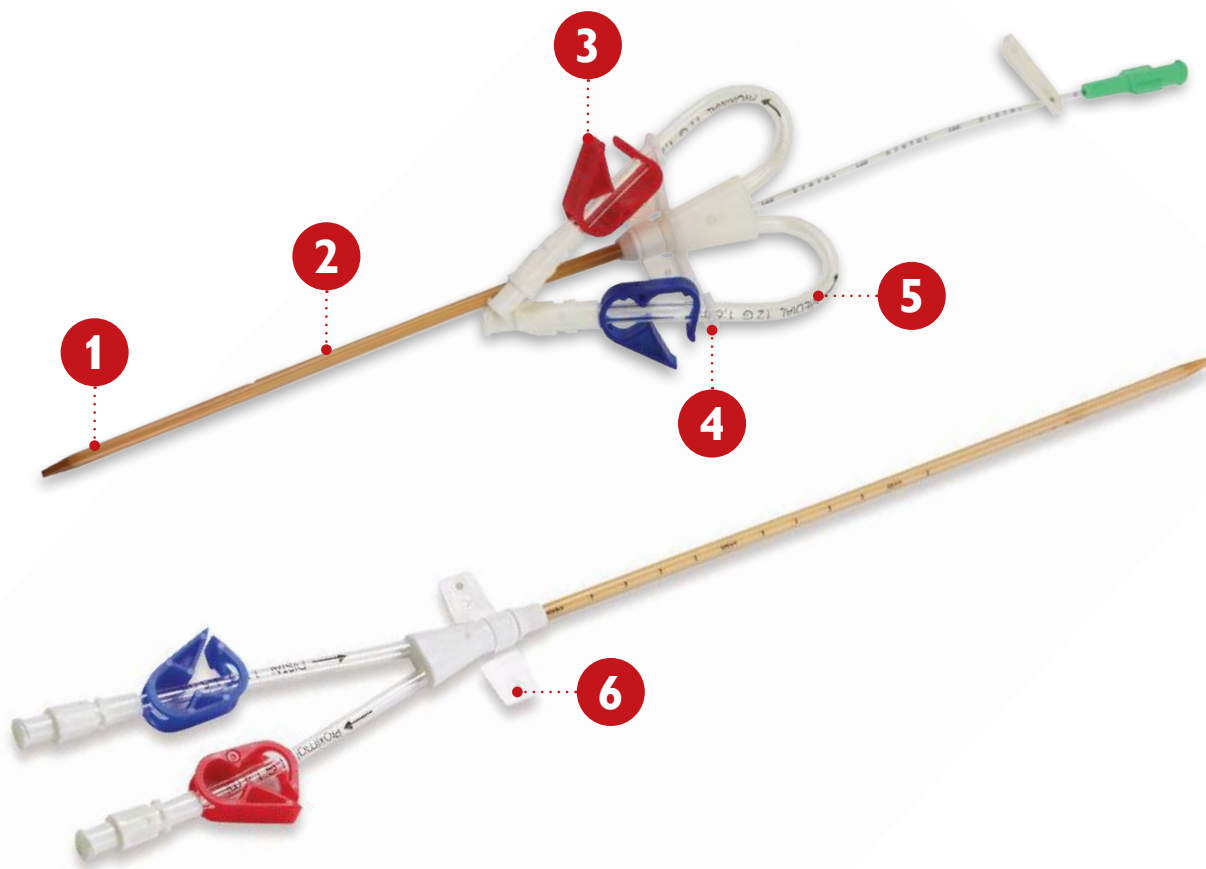


# Dualyse / Trilyse Expert

## Silver Ion Impregnated

Choose your catheter with **care** and **confidence**

Dualyse and Trilyse Expert are Vygon's double and triple lumen temporary dialysis catheters, offering the same Agion antimicrobial protection found in the Multicath Expert range.



### 1 Atraumatic tip

Soft, flexible design allows smooth transition over the guidewire whilst reducing the potential for internal vessel trauma.

### 2 Agion

Reduces the risk of catheter related infections.<sup>10</sup>

### 3 Colour coded clamps

Aids line identification.

### 4 Multi-positional removable collar

Allowing external lumens to be positioned according to patient comfort.

### 5 Clear markings

Assists in the accurate placement of the catheter tips.

### 6 Double rotating collar

Allowing in situ catheter rotation, avoiding occlusion of proximal exit holes against vessel wall.

# Ordering codes

## Multistar+

Vygon Code	NHSCC Code	No of Lumen	XRO Catheter (PUR)			Flow Rate (ml/min)							Priming Volume (ml)					Catheter Lumen Gauge								
			Length (cm)	Size (Fr)	OD (mm)	Dist	Med 1	Med 2	Med 3	Med 4	Med 5	Prox	Dist	Med 1	Med 2	Med 3	Med 4	Med 5	Prox	Dist	Med 1	Med 2	Med 3	Med 4	Med 5	Prox
6170.120	-	7	12.5	11.5	3.9	60	110	18	18	21	21	21	0.49	0.58	0.50	0.50	0.50	0.50	0.50	16	14	18	18	18	18	18
6170.170	-	7	16	11.5	3.9	60	110	15	15	18	18	18	0.61	0.62	0.43	0.50	0.50	0.50	0.52	16	14	18	18	18	18	18
6170.270	-	7	20	11.5	3.9	50	94	12	12	14	14	14	0.61	0.65	0.49	0.50	0.50	0.50	0.56	16	14	18	18	18	18	18
6159.167	FSU469	5	16	9.5	3.15	57	84	15	16	-	-	18	0.43	0.57	0.36	0.36	-	-	0.42	16	14	18	18	-	-	18
6159.207	FSU470	5	20	9.5	3.15	55	80	15	12	-	-	17	0.47	0.60	0.39	0.38	-	-	0.43	16	14	18	18	-	-	18
6158.167	FSU467	4	16	8.5	2.85	61	100	17	-	-	-	22	0.38	0.49	0.29	-	-	-	0.33	16	14	18	-	-	-	18
6158.207	FSU468	4	20	8.5	2.85	56	100	15	-	-	-	14	0.38	0.50	0.53	-	-	-	0.36	16	14	18	-	-	-	18

## Multicath Expert

Vygon Code	NHSCC Code	No of Lumen	XRO Catheter (PUR)			Flow Rate (ml/min)					Priming Volume (ml)				Catheter Lumen Gauge						
			Length (cm)	Size (Fr)	OD (mm)	Dist	Med 1	Med 2	Med 3	Prox	Dist	Med 1	Med 2	Med 3	Prox	Dist	Med 1	Med 2	Med 3	Prox	
8159.125	FSU454	5	12.5	9.5	3.15	65	110	18	19	20	0.43	0.55	0.36	0.36	0.42	16	14	18	18	18	18
8159.167	FSU144	5	16	9.5	3.15	57	84	15	16	18	0.43	0.57	0.36	0.36	0.42	16	14	18	18	18	18
8159.207	FSU145	5	20	9.5	3.15	55	80	15	12	17	0.47	0.60	0.39	0.38	0.43	16	14	18	18	18	18
8158.125	FYV026	4	12.5	8.5	2.85	60	107	18	-	19	0.51	0.65	0.44	-	0.44	16	14	18	-	18	18
8158.167	FYV023	4	16	8.5	2.85	49	93	13	-	18	0.61	0.74	0.56	-	0.52	16	14	18	-	18	18
8158.207	FYV024	4	20	8.5	2.85	47	69	11	-	14	0.66	0.82	0.60	-	0.58	16	14	18	-	18	18
8155.167	FYV022	3	16	7.5	2.7	63	34	-	-	36	0.38	0.33	-	-	0.38	14	18	-	-	18	18
8155.207	FYV015	3	20	7.5	2.7	60	30	-	-	30	0.45	0.34	-	-	0.36	14	18	-	-	18	18
8157.167	FSU314	2	16	7.5	2.5	56	-	-	-	52	0.48	-	-	-	0.58	16	-	-	-	18	18
8157.207	FSU315	2	20	7.5	2.5	47	-	-	-	42	0.39	-	-	-	0.40	16	-	-	-	18	18

## Multicath Forward

Vygon Code	NHSCC Code	No of Lumen	XRO Catheter (PUR)			Flow Rate (ml/min)							Priming Volume (ml)					Catheter Lumen Gauge								
			Length (cm)	Size (Fr)	OD (mm)	Dist	Med 1	Med 2	Med 3	Med 4	Med 5	Prox	Dist	Med 1	Med 2	Med 3	Med 4	Med 5	Prox	Dist	Med 1	Med 2	Med 3	Med 4	Med 5	Prox
170.120	-	7	12.5	11.5	3.9	60	110	18	18	21	21	21	0.49	0.58	0.50	0.50	0.50	0.50	16	14	18	18	18	18	18	
170.170	-	7	16	11.5	3.9	60	110	15	15	18	18	18	0.61	0.62	0.43	0.50	0.50	0.50	0.52	16	14	18	18	18	18	
170.270	-	7	20	11.5	3.9	50	94	12	12	14	14	14	0.60	0.65	0.49	0.50	0.50	0.50	0.56	16	14	18	18	18	18	
170.370	-	7	30	11.5	3.9	38	77	8	8	8	10	10	0.64	0.80	0.52	0.56	0.60	0.60	0.61	16	14	18	18	18	18	
0159.167	FSU232	5	16	9.5	3.15	57	84	15	16	-	-	18	0.43	0.57	0.36	0.36	-	-	0.42	16	14	18	18	-	-	18
0159.207	FSU233	5	20	9.5	3.15	55	80	15	12	-	-	17	0.47	0.60	0.39	0.38	-	-	0.43	16	14	18	18	-	-	18
0158.125	-	4	12.5	8.5	2.80	7	123	27	-	-	-	36	0.45	0.60	0.39	-	-	-	0.36	16	14	18	-	-	-	18
0158.167	FSU142	4	16	8.5	2.85	49	93	13	-	-	-	18	0.61	0.74	0.56	-	-	-	0.52	16	14	18	-	-	-	18
0158.207	FSU143	4	20	8.5	2.80	47	69	11	-	-	-	14	0.66	0.82	0.60	-	-	-	0.58	16	14	18	-	-	-	18
0155.167	FSU140	3	16	7.5	2.7	63	34	-	-	-	-	36	0.38	0.33	-	-	-	-	0.38	14	18	-	-	-	-	18
0155.207	FSU141	3	20	7.5	2.7	60	30	-	-	-	-	30	0.45	0.34	-	-	-	-	0.36	14	18	-	-	-	-	18
0157.167	-	2	16	7.5	2.5	56	-	-	-	-	-	52	0.39	-	-	-	-	-	0.33	16	-	-	-	-	-	18
0157.207	-	2	20	7.5	2.5	47	-	-	-	-	-	42	0.39	-	-	-	-	-	0.40	16	-	-	-	-	-	18

## Dualyse/Trilyse

Vygon Code	NHSCC Code	No of Lumen	XRO Catheter (PUR)			Flow Rate (ml/min)					Priming Volume (ml)				Catheter Lumen Gauge						
			Length (cm)	Size (Fr)	OD (mm)	Dist	Med 1	Med 2	Med 3	Prox	Dist	Med 1	Med 2	Med 3	Prox	Dist	Med 1	Med 2	Med 3	Prox	
8139.52	FSY039	3	20	12	4.0	43	195	-	-	365	0.60	1.80	-	-	1.30	16	12	-	-	11	11
8139.51	FSY036	3	15	12	4.0	55	230	-	-	400	0.50	1.60	-	-	1.70	16	12	-	-	11	11
8132.93	-	2	24	12	4.0	370	-	-	-	370	1.80	-	-	-	1.80	11	-	-	-	11	11
8132.92	FSY126	2	20	12	4.0	350	-	-	-	315	1.90	-	-	-	1.90	11	-	-	-	11	11
8132.91	FSY125	2	15	12	4.0	350	-	-	-	380	1.70	-	-	-	1.70	11	-	-	-	11	11

#### References

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- 2 W. C. Russell; J. L. Parker; W. C. Russell, Leicester Royal Infirmary, Leicester LE1 5WW, UK. Thirteen centimetre central venous catheters, lucky for all?
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- 9 MHRA alert, Medical device alert, MDA/2012/048
- 10 H.Loertzer et al. Use of catheters with the AgION Antimicrobial system in kidney transplant recipients to reduce infection risk. *Transplantation Proceedings*; 38, 707-710 (2006)

All references are available on request.

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#### For further information, please contact: [vygon@vygon.co.uk](mailto:vygon@vygon.co.uk)

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Vygon (UK) Ltd • The Pierre Simonet Building • V Park • Gateway North  
• Latham Road • Swindon • Wiltshire • SN25 4DL  
Tel: 01793 748800 • Fax: 01793 748899 • Twitter: @vygonuk  
Web: [www.vygon.co.uk](http://www.vygon.co.uk) Content correct as of: 07/2017  
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