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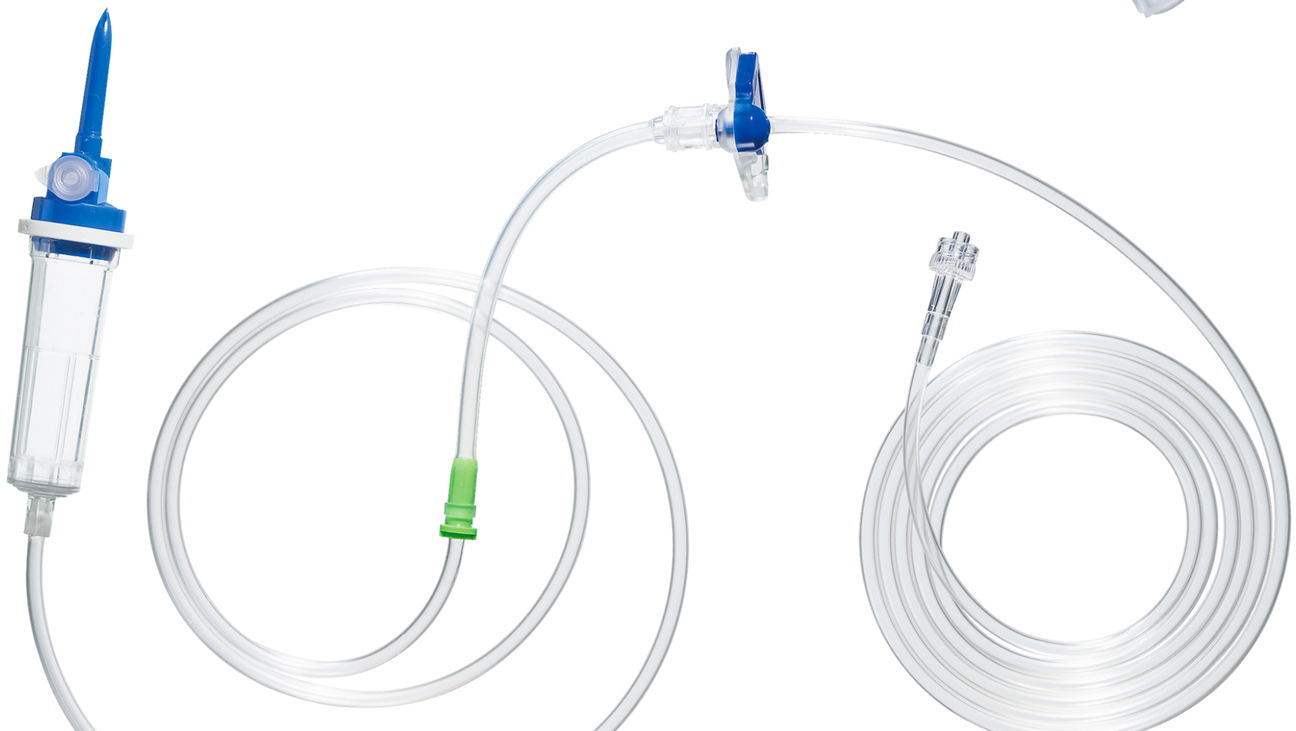
MedTech

Product catalogue
Infusion Systems

January 2023

Get started ›



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“Safe, reliable application management for effective therapies”

This is the guiding principle, upon which the Fresenius Kabi MedTech Division bases all of its products in order to provide you with maximum benefits.

During the intravenous and subcutaneous application, you use different complex systems to provide a successful treatment.

The ultimate goal is to ensure that the corresponding medications and nutritional components and/or blood products **reach the patient via proper and effective channels in order to achieve an optimal clinical result for the good of your patients.**

The Fresenius Kabi MedTech Division has the expertise you need for your application management system.

With our established brand-name products and services we can assist you with your therapeutic measures, in order to achieve optimal results for your patients.

The medical devices manufactured by Fresenius Kabi, offer you a high level of potential benefits in the primary care of patients requiring infusions and nutritional support. In developing and designing our products, we pay special attention to **compatibility with medications for the specific product groups, nutritional components, and blood products,** the **interaction between active** (application techniques) **and passive** (application systems) **medical devices** as well as **patient and user safety, all for your benefit.**[1]

This catalogue refers to good clinical practice.

Continue ›

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Fresenius Kabi Infusion Systems Portfolio

IFU of products can be accessed in the **IFU Fresenius Kabi.**

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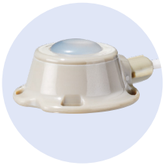
Infusion Therapy







Up to 80% of all patients require an infusion therapy during their hospital stay.[2]

Infusions are primarily used for the:

- Application of medications
- Volume replacement therapy
- Regulation of electrolyte balance and acid-base balance
- Application of parenteral nutrition
- Application of blood and blood components (transfusion)

As a leading company in the production of infusion and nutritional therapy systems, Fresenius Kabi offers a **comprehensive product portfolio** that provides you and your patients a safe and reliable application management system for infusion therapy.

You benefit from a **range of products that work together perfectly** for optimal infusion management.

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Infusion Pumps - stationary and ambulatory

A medical device for administering a solute or a drug, prepared in a bag or bottle, at a given flow rate through a disposable tubing line (IV-Set).

Volumat pumps

Accurate and continuous administration of fluids at large rates (up to 1,500 ml/h)

Optima MS/VS*

Agilia

Exelia

Belonging sets

VS - VS-Sets,
MS - MS-Sets

Volumat lines

Syringe pumps

Administration of drugs with narrow therapeutic windows, or for very small volumes at a low rate (insulin, heparin etc.)

Orchestra*

Agilia

Exelia

Injectomat Agilia*

Infusia

Belonging sets

Injectomat syringes and lines

Ambulatory pumps

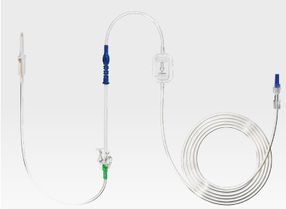
Ambulatory administration of fluids (parenteral nutrition, standard solutions or antibiotics)

Ambix activ*

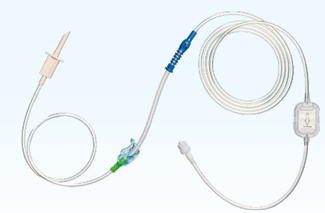
Ambix nova

Belonging sets

Ambix activ sets



Ambix nova sets



Gray background: Predecessor, blue background: New generation. *Devices not available.

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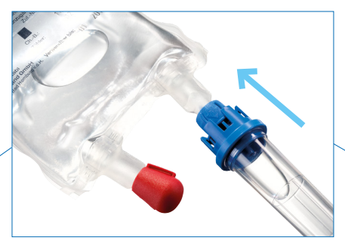
Fresenius Kabi Infusion Solutions

Infusion solutions and compatible application systems from Fresenius Kabi for preparation of medications and infusion therapy

freeflex®

Infusion bag with integrated port technology



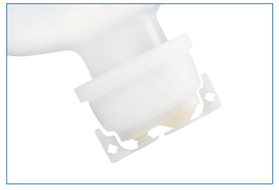
freeflex® volumat lines with unique 'click' connection with freeflex® and freeflex®+ bags

freeflex®+

Infusion bag with integrated port technology – needle-free solution for drug reconstitution

KabiPac®

Infusion bottle with the innovative DuoCap system



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Pressure Infusion sets – Volumat Lines

Volumat Lines are dedicated infusion lines for Volumat Agilia/Exelia pumps. These lines are available in different configurations to better match the different local practices. Available for infusion, transfusion, oncology, parenteral nutrition and pediatric usage.

- **Standard and Parenteral Nutrition lines** for infusion of standard solutions and parenteral nutrition.
- **Transfusion lines** for blood transfusion. Transfusion lines are equipped with a 200 µm filter in the drip chamber to avoid filtration of important blood components. Multiple set configurations are available
- **Pediatric lines** for pediatric infusion therapy. Pediatric lines are equipped with a low diameter tube to limit priming volume or burette to deliver a defined volume
- **Oncology lines** for oncological infusion therapy. Oncology lines have multiple configurations (special filters, side lines or upper needle-free access) to cover patient's needs
- **Special lines** for infusion therapy. Set configurations have been customized to specific requirements

NEW

K-Zero®

Needle-free Connector with Neutral Displacement

Integrated in a Pressure Set, the K-Zero will provide additional access for connecting a secondary line or administrating drugs through a syringe.

Volumat Lines with **PE-lined fluid path**

Volumat Lines with PE material consist of three layer tubing system (PVC-EVA-PE). Using PE material, it offers a high drug compatibility whilst keeping the advantage of an outer PVC tubing.

Volumat Lines **AirBlock**

The Volumat Lines AirBlock infusion sets are equipped with an AirBlock membrane in the drip chamber. Ensuring that the Line does not run empty during continuous infusions.

PVC - Polyvinyl choride, EVA - Ethylene-vinyl acetate, PE - Polyethylene

**According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP Further information to all Volumat Lines upon request available*

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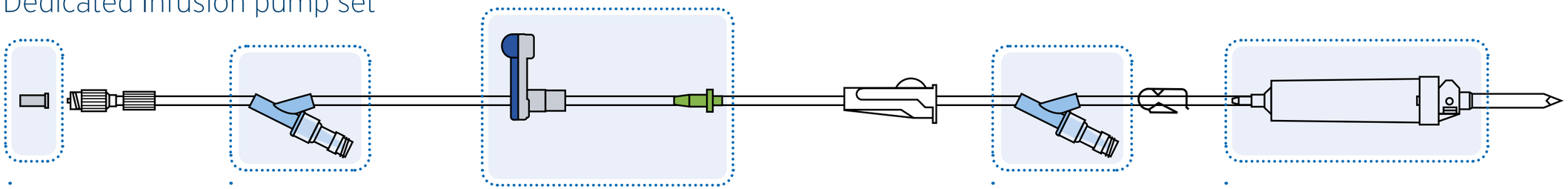
Volumat Lines available features

Dedicated Infusion pump set



Flow-Stop cap:
Automatic prime stop from hydrophobic filter

Downstream Needle-free injection port:
1. Intermittent injections of drugs not controlled by the pump
2. Reduce risk of needle stick injuries

K-Zero NEW

Calibrated Silicone Pumping Segment:
1. Colour coded for a simple set positioning in the pump
2. Includes the blue SafeClip to provide security against free-flow when set is removed from the pump
3. Wide range of flow rates
4. Precise and stable flow rates

Upstream Needle-free injection port:
For Secondary Infusion

K-Zero NEW

Drip Chamber:
Visually control the flow

NEW

Drip Chamber with AirBlock:
1. Preventing the line to run empty during continuous infusions
2. Reducing air access to the line resulting in less air alarms on the pump
3. Allowing to change to infusion container without additional priming

According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP Further information to all Volumat Lines upon request available

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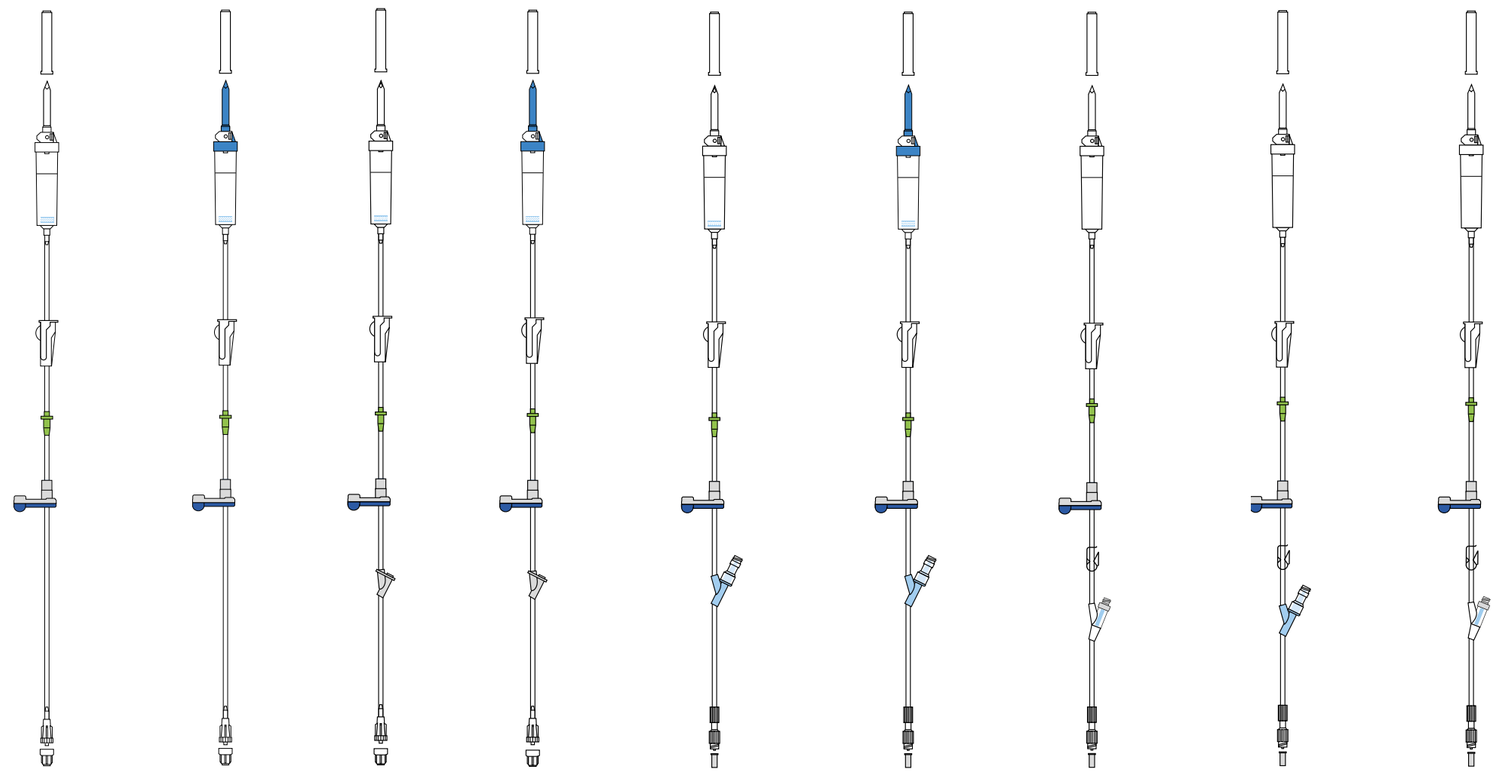
DEHP FREE*

Volumat Lines
Standard (ST)



DESIGNATION	VL ST00	VL ST00 AirBlock	VL ST01	VL ST01 AirBlock	VL ST02	VL ST02 AirBlock	VL ST02-0 (NAM)	VL ST02 ND	VL ST02-X0 (NAM)
ARTICLE REFERENCE (PO 2023 - phased out 2023, PI - Phased in)	**M46441000S** **M46441000SAP** (PO 2023) **M46441000SCB**	**M46441020**	**M46441600S** **M46441600SSA**	**M46441620**	**M46441900SAP** (PO 2023) **M46441900SSA** (PO 2023) **M46441900S** (PO 2023) **M46441900Y** (PI)	**M46441920** (PO 2023) **M46441920Y**	**M46441960**	**M46441980** (PO 2023) **M46441980AP** (PO 2023) **M46441980Y** (PI)	**M46441985**
SPIKE ● Vented / ● Non-vented / freeflex®	●	●	●	●	●	●	●	●	●
PORE SIZE OF DRIP CHAMBER FILTER	15 µm	4 µm	15 µm	4 µm	15 µm	4 µm	-	-	-
ANTI-BACTERIA AIR ELIMINATING FILTER	-	-	-	-	-	-	-	-	-
PRIMING VOLUME	25.9 ml	25.9 ml	26.1 ml	26.1 ml	26 ml	26 ml	26.6 ml	26 ml	26.6 ml
LENGTH DOWNSTREAM	~165 cm	~165 cm	~165 cm	~165 cm	~165 cm	~165 cm	~165 cm	~165 cm	~165 cm
MAIN MATERIALS (TUBE)	PVC	PVC	PVC	PVC	PVC	PVC	PVC	PVC	PVC
SPECIAL CHARACTERISTICS	-	AirBlock	-	AirBlock	K-Zero (M46441900Y) Rotating male luer	AirBlock, K-Zero (M46441920Y) Rotating male luer	K-Nect, Rotating male luer	K-Zero (M46441980Y) Rotating male luer	K-Nect, Rotating male luer

Product Codes: AP - Asia Pacific, CB/CN - China, SA - South America (Brazil), NAM - North America. Specific product codes indicate that the articles are labeled according to regional requirements.

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Volumat Lines
Standard (ST)

DESIGNATION	VL ST10	VL ST10 AirBlock	VL ST10-0 (NAM)	VL ST10-XO (NAM)	VL ST22	VL ST22 AirBlock	VL ST30	VL ST42	VL ST44
ARTICLE REFERENCE (PO 2023 - phased out 2023, PI - Phased in)	**M46441300S**	**M46441320**	**M46441360**	**M46441375**	**M46442500S** (PO 2023) **M46442500Y** (PI)	**M46442520** (PO 2023) **M46442520Y**	**M46446800**	**M46442600S** (PO 2023) **M46442600SAP** (PO 2023) **M46442600Y** (PI)	**M46443200** (PO 2023) **M46443200Y** (PI)
SPIKE ● Vented / ● Non-vented / freeflex®	●	●	●	●	●	●	●	●	●
PORE SIZE OF DRIP CHAMBER FILTER	15 µm	4 µm	-	-	15 µm	4 µm	15 µm	15 µm	15 µm
ANTI-BACTERIA AIR ELIMINATING FILTER	-	-	-	-	-	-	-	-	-
PRIMING VOLUME	25.9 ml	25.9 ml	25.9 ml	25.9 ml	26.1 ml	26.1 ml	28.7 ml	26.5 ml	26.5 ml
LENGTH DOWNSTREAM	~165 cm	~165 cm	~165 cm	~165 cm	~165 cm	~165 cm	~205 cm	~165 cm	~165 cm
MAIN MATERIALS (TUBE)	PVC	PVC	PVC	PVC	PVC	PVC	PVC	PVC	PVC
SPECIAL CHARACTERISTICS	Rotating male luer	AirBlock, Rotating male luer	Rotating male luer	Rotating male luer	K-Zero (M46442500Y) Rotating male luer	AirBlock, K-Zero (M46442520Y) Rotating male luer	-	K-Zero (M46442600Y) Rotating male luer	K-Zero (M46443200Y) Rotating male luer

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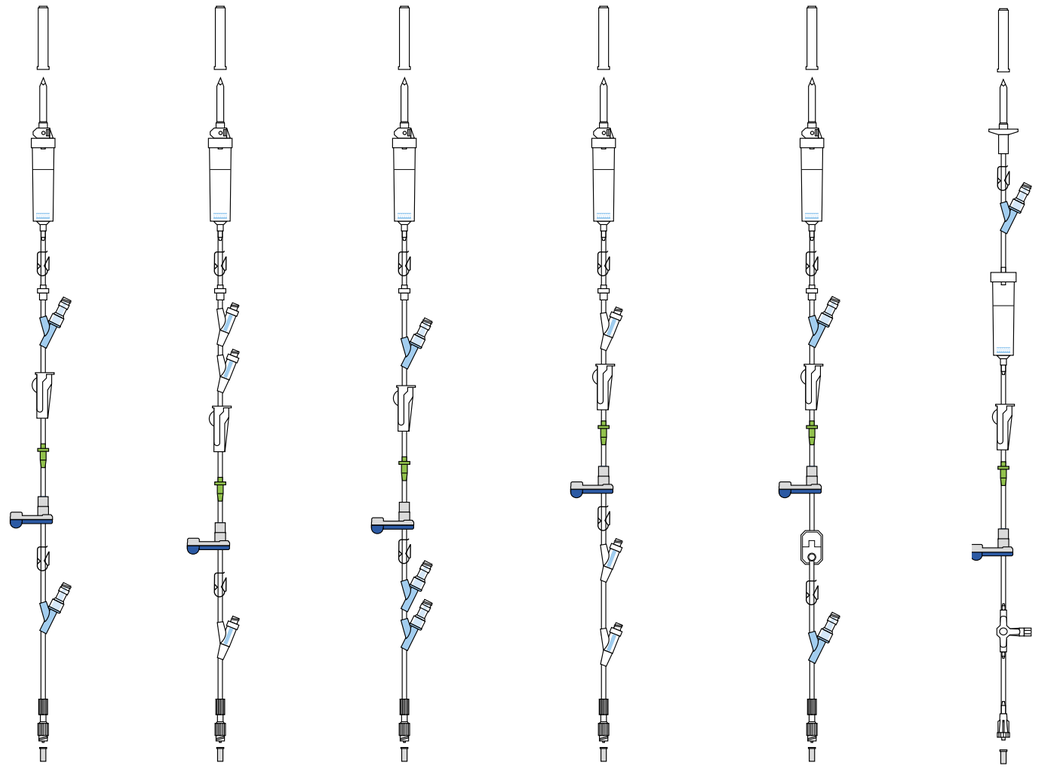
Volumat Lines

Primary (PR)

For NAM



DESIGNATION	VL PR42-11	VL PR42-21	VL PR42-12	VL PR44-12	VL PR72-11	VL PR21
ARTICLE REFERENCE (PO 2023 - phased out 2023, PI - Phased in)	**M46445660** **M46445665** (PI)	**M46445670**	**M46445690** **M46445695**(PI)	**M46445780**	**M46445860** **M46445865** (PI)	**M46446100S** (PO 2023) **M46446100Y** (PI)
SPIKE ● Vented / ● Non-vented / freeflex®	●	●	●	●	●	●
PORE SIZE OF DRIP CHAMBER FILTER	-	-	-	-	-	15 µm
ANTI-BACTERIA AIR ELIMINATING FILTER	-	-	-	-	0.2 µm	-
PRIMING VOLUME	27.3 ml	28.3 ml	26.3 ml	28.0 ml	29.7 ml	24.4 ml
LENGTH DOWNSTREAM	~165 cm	~165 cm	~165 cm	~165 cm	~165 cm	~155 cm
MAIN MATERIALS (TUBE)	PVC	PVC	PVC	PVC	PVC	PVC (DEHP)
SPECIAL CHARACTERISTICS	K-Zero (M46445665) Rotating male luer	K-Nect Rotating male luer	K-Zero (M46445695) Rotating male luer	K-Nect Rotating male luer	K-Zero (M46445865) Rotating male luer	K-Zero (M46446100Y)

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Volumat Lines
Oncology (ON)

DESIGNATION	VL ON10	VL ON11	VL ON12	VL ON12 FX	VL ON15	VL ON17	VL ON20	VL ON21	VL ON22	VL ON22 AirBlock	VL ON22 FX	VL ON22 OP	VL ON22 OP NF
ARTICLE REFERENCE (PO 2023 - phased out 2023, PI - Phased in)	**M46445500S**	**M46443900S** (PO 2023) **M46443900Y** (PI)	**M46444800S** (PO 2023) **M46444800Y** (PI)	**M46444850S** (PO 2023) **M46444850Y** (PI)	**M46446600**	**M46444815**	**M46445700S**	**M46444700S** (PO 2023) **M46444700Y** (PI)	**M46444200S** (PO 2023) **M46444200Y** (PI)	**M46444210** (PI)	**M46444251** (PO 2023) **M46444251Y** (PI)	**M46446000S** (PO 2023) **M46446000Y** (PI)	**M46444230S** (PO 2023) **M46444230Y** (PI)
SPIKE ● Vented / ● Non-vented / freeflex®	●	●	●	freeflex®	●	●	●	●	●	●	freeflex®	●	●
PORE SIZE OF DRIP CHAMBER FILTER	15 µm	15 µm	15 µm	15 µm	15 µm	15 µm	15 µm	15 µm	15 µm	4 µm	15 µm	15 µm	15 µm
ANTI-BACTERIA AIR ELIMINATING FILTER	-	-	-	-	-	0.2 µm	-	-	-	-	-	-	-
PRIMING VOLUME	28.2 ml	23.5 ml	23.0 ml	23.6 ml	31.7 ml	25 ml	30.3 ml	23.9 ml	23.5 ml	23.5 ml	24.9 ml	24 ml	21.4 ml
LENGTH DOWNSTREAM	~195 cm	~165 cm	~165 cm	~165 cm	~200 cm	~165 cm	~195 cm	~165 cm	~165 cm	~165 cm	~140 cm	~165 cm	~165 cm
MAIN MATERIALS (TUBE)	PVC, PUR	PVC	PUR	PUR	PVC	PUR	PVC, PUR	PVC	PUR	PUR	PUR	PUR	PUR
SPECIAL CHARACTERISTICS	Rotating male luer	K-Zero (M46443900Y)	K-Zero (M46444800Y), PVC-free	K-Zero (M46444850Y), PVC-free	Rotating male luer	K-Zero, PVC-free	Rotating male luer	K-Zero (M46444700Y), Rotating male luer	K-Zero (M46444200Y), PVC-free	AirBlock, K-Zero, PVC-free	K-Zero (M46444251Y), Rotating male luer, PVC-free	Light protected K-Zero (M46446000Y), Rotating male luer, PVC-free	Light protected, K-Zero (M46444230Y), Rotating male luer (M46444230S), PVC-free

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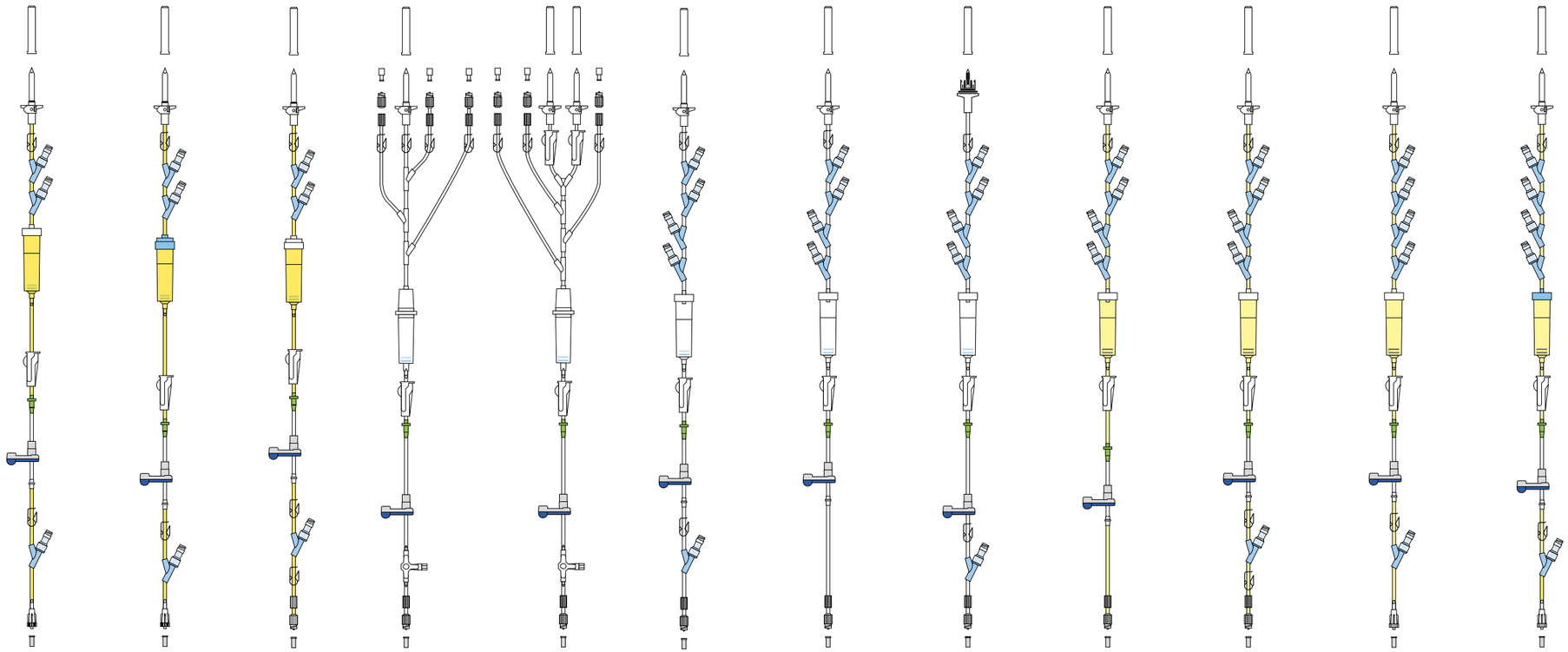
Volumat Lines
Oncology (ON)



DESIGNATION	VL ON22 OP NF	VL ON22 OP NF AirBlock	VL ON22 OP NF PE	VL ON30	VL ON40	VL ON401	VL ON42	VL ON42 FX	VL ON42 OP	VL ON42 OP NF	VL ON42 OP NF	VL ON42 OP NF AirBlock
ARTICLE REFERENCE (PO 2023 - phased out 2023, PI - Phased in)	**M46444235** (PO 2023) **M46444235Y** (PI)	**M46444234** (PI)	**M46444233** (PI)	**M46445900S**	**M46445100S**	**M46444001** (PO 2023) **M46444001Y** (PI)	**M46444000S** (PO 2023) **M46444000Y** (PI)	**M46444051** (PO 2023) **M46444051Y** (PI)	**M46445801** (PO 2023) **M46445801Y** (PI)	**M46444080S** (PO 2023) **M46444080Y** (PI)	**M46444085** (PO 2023) **M46444085Y** (PI)	**M46444084** (PI)
SPIKE ● Vented / ● Non-vented / freeflex®	●	●	●	●	●	●	●	freeflex®	●	●	●	●
PORE SIZE OF DRIP CHAMBER FILTER	15 µm	4 µm	15 µm	15 µm	15 µm	15 µm	15 µm	15 µm	15 µm	15 µm	15 µm	4 µm
ANTI-BACTERIA AIR ELIMINATING FILTER	-	-	-	-	-	-	-	-	-	-	-	-
PRIMING VOLUME	26.4 ml	22.8 ml	24.2 ml	32.8 ml	35.8 ml	25.2 ml	24.1 ml	25.2 ml	25.8 ml	22.3 ml	27.3 ml	26.5 ml
LENGTH DOWNSTREAM	~165 cm	~165 cm	~145 cm	~195 cm	~195 cm	~140 cm	~140 cm	~140 cm	~150 cm	~145 cm	~165 cm	~165 cm
MAIN MATERIALS (TUBE)	PUR	PUR	PE	PVC	PVC, PUR	PUR	PUR	PUR	PUR	PUR	PUR	PUR
SPECIAL CHARACTERISTICS	Light protected, K-Zero (M46444235Y), PVC-free	Light protected, K-Zero, AirBlock, PVC-free	Light protected, K-Zero, Rotating male luer, PE	Rotating male luer	Rotating male luer	K-Zero (M46444001Y), Rotating male luer, PVC-free	K-Zero (M46444001Y), Rotating male luer, PVC-free	K-Zero (M46444051Y), Rotating male luer, PVC-free	Light protected, K-Zero (M46445801Y) Rotating male luer, PVC-free	Light protected, K-Zero (M46444080Y), Rotating male luer, PVC-free	Light protected, K-Zero (M46444085Y), PVC-free	Light protected, K-Zero, AirBlock, PVC-free

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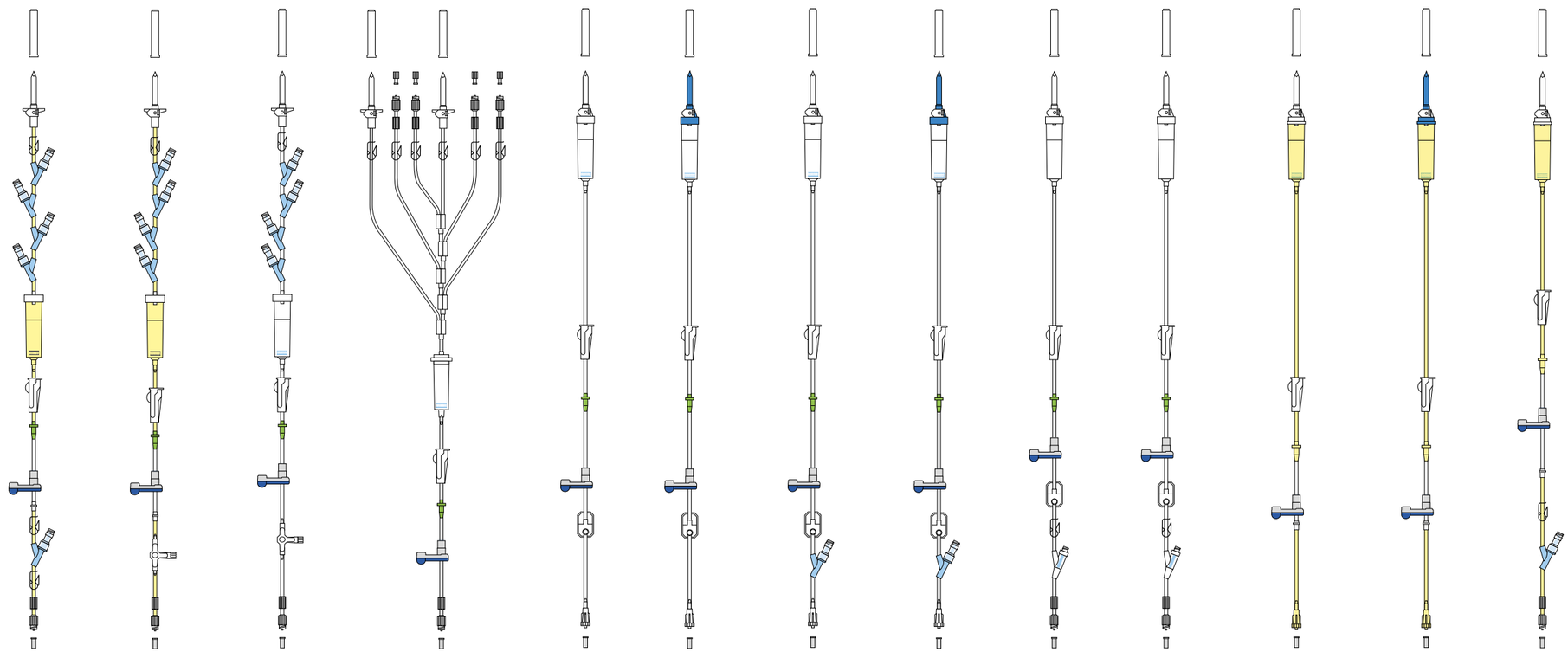
Volumat Lines
Oncology (ON)



DESIGNATION	VL ON42 OP NF PE	VL ON42 OP SC	VL ON42 SC	VL ON45	VL ON70	VL ON70 AirBlock	VL ON72	VL ON72 AirBlock	VL ON72-1 (NAM)	VL ON72-X1 (NAM)	VL ON90	VL ON90 AirBlock	VL ON91
ARTICLE REFERENCE (PO 2023 - phased out 2023, PI - Phased in)	**M46444083** (PI)	**M46444071** (PO 2023) **M46444071Y** (PI)	**M46444061** (PO 2023) **M46444061Y** (PI)	**M46446700**	**M46444600S** **M46444600SAP**	**M46444610** (PI)	**M46444100S** (PO 2023) **M46444100Y** (PI)	**M46444810** (PI)	**M46444160**	**M46444175**	**M46444900S** **M46444900SAP** (PO 2023) **M46444900SSA**	**M46444910**	**M46444901** (PO 2023) **M46444901Y** (PI)
SPIKE ● Vented / ● Non-vented / freeflex®	●	●	●	●	●	●	●	●	●	●	●	●	●
PORE SIZE OF DRIP CHAMBER FILTER	15 µm	15 µm	15 µm	15 µm	15 µm	4 µm	15 µm	4 µm	-	-	15 µm	4 µm	15 µm
ANTI-BACTERIA AIR ELIMINATING FILTER	-	-	-	-	0.2 µm	0.2 µm	0.2 µm	0.2 µm	0.2 µm	0.2 µm	-	-	-
PRIMING VOLUME	26.1 ml	25.1 ml	24.7 ml	36.8 ml	27.8 ml	27.8 ml	28.6 ml	28.6 ml	28.6 ml	28.6 ml	26 ml	26 ml	24.7 ml
LENGTH DOWNSTREAM	~145 cm	~140 cm	~140 cm	~165 cm	~165 cm	~165 cm	~175 cm	~175 cm	~165 cm	~165 cm	~165 cm	~165 cm	~145 cm
MAIN MATERIALS (TUBE)	PE	PUR	PUR	PVC	PUR	PUR	PUR	PUR	PUR	PUR	PUR	PUR	PUR
SPECIAL CHARACTERISTICS	Light protected, K-Zero, Rotating male luer, PE material	Light protected, K-Zero (M46444071Y), Rotating male luer, PVC-free	K-Zero (M46444061Y), Rotating male luer, PVC-free	Rotating male luer	PVC-free	AirBlock, PVC-free	K-Zero (M46444100Y), PVC-free	K-Zero AirBlock, PVC-free	K-Nect, Rotating male luer, PVC-free	K-Nect, Rotating male luer, PVC-free	Light protected, PVC-free	Light protected, AirBlock, PVC-free	Light protected, K-Zero (M46444901Y), Rotating male luer, PVC-free

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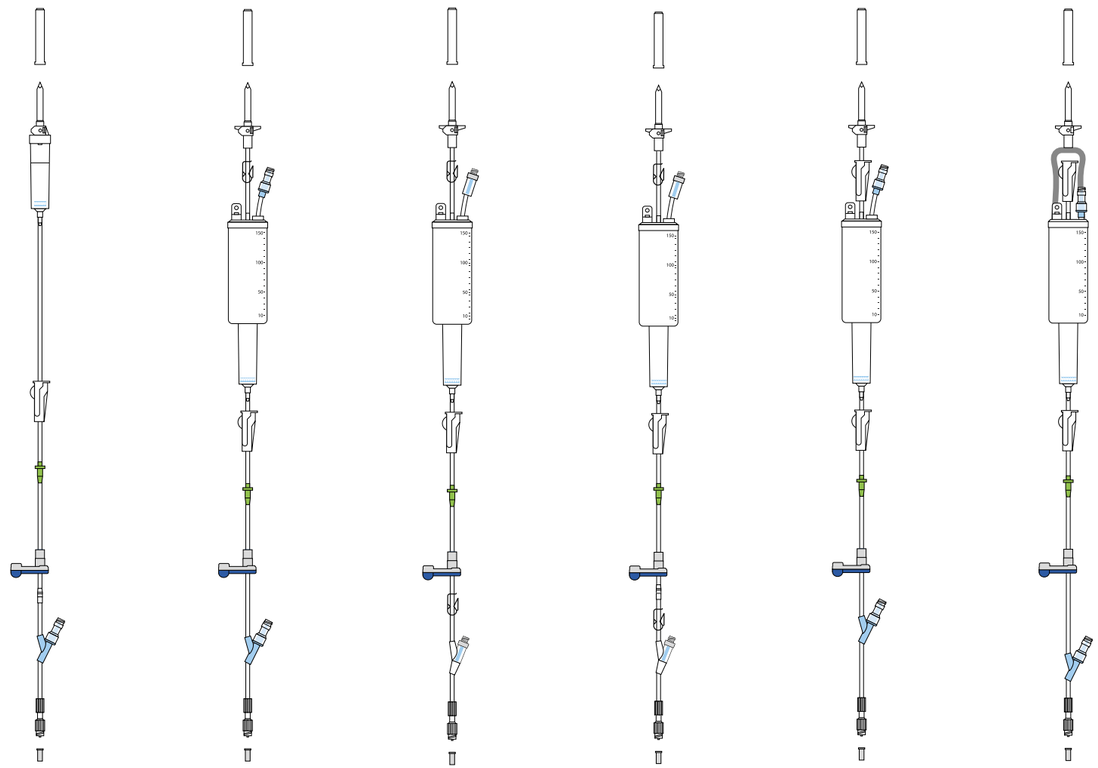
Volumat Lines

Pediatric (PA)



DESIGNATION	VL PA02	VL PA92	VL PA 92-1 (NAM)	VL PA 92-2 (NAM)	VL PA93	VL PA94
ARTICLE REFERENCE (PO 2023 - phased out 2023, PI - Phased in)	**M46442200S** (PO 2023) **M46442200Y** (PI)	**M46445200S** (PO 2023) **M46445200SAP** (PO 2023) **M46445200Y** (PI)	**M46445260**	**M46445270**	**M46443800S** (PO 2023) **M46443800Y** (PI)	**M46445300S** (PO 2023) **M46445300Y** (PI)
SPIKE ● Vented / ● Non-vented / freeflex®	●	●	●	●	●	●
PORE SIZE OF DRIP CHAMBER/BURETTE FILTER	15 µm	15 µm	15 µm	15 µm	15 µm	15 µm
ANTI-BACTERIA AIR ELIMINATING FILTER	-	-	-	-	-	-
PRIMING VOLUME	16.6 ml	25.2 ml	25.8 ml	22.4 ml	25.2 ml	25.2 ml
LENGTH DOWNSTREAM	~100 cm	~165 cm	~165 cm	~165 cm	~165 cm	~165 cm
MAIN MATERIALS (TUBE)	PVC	PVC	PVC	PVC	PVC	PVC
SPECIAL CHARACTERISTICS	K-Zero (M46442200Y), Rotating male luer	150 ml Burette, K-Zero (M46445200Y), Rotating male luer	K-Nect, 150 ml Burette, Rotating male luer	K-Nect, 150 ml Burette, Rotating male luer	150 ml Burette, K-Zero (M46443800Y), Rotating male luer	150 ml Burette, K-Zero (M46445300Y), Rotating male luer

Product Codes: AP - Asia Pacific, CB/CN - China, SA - South America (Brazil), NAM - North America. Specific product codes indicate that the articles are labeled according to regional requirements.

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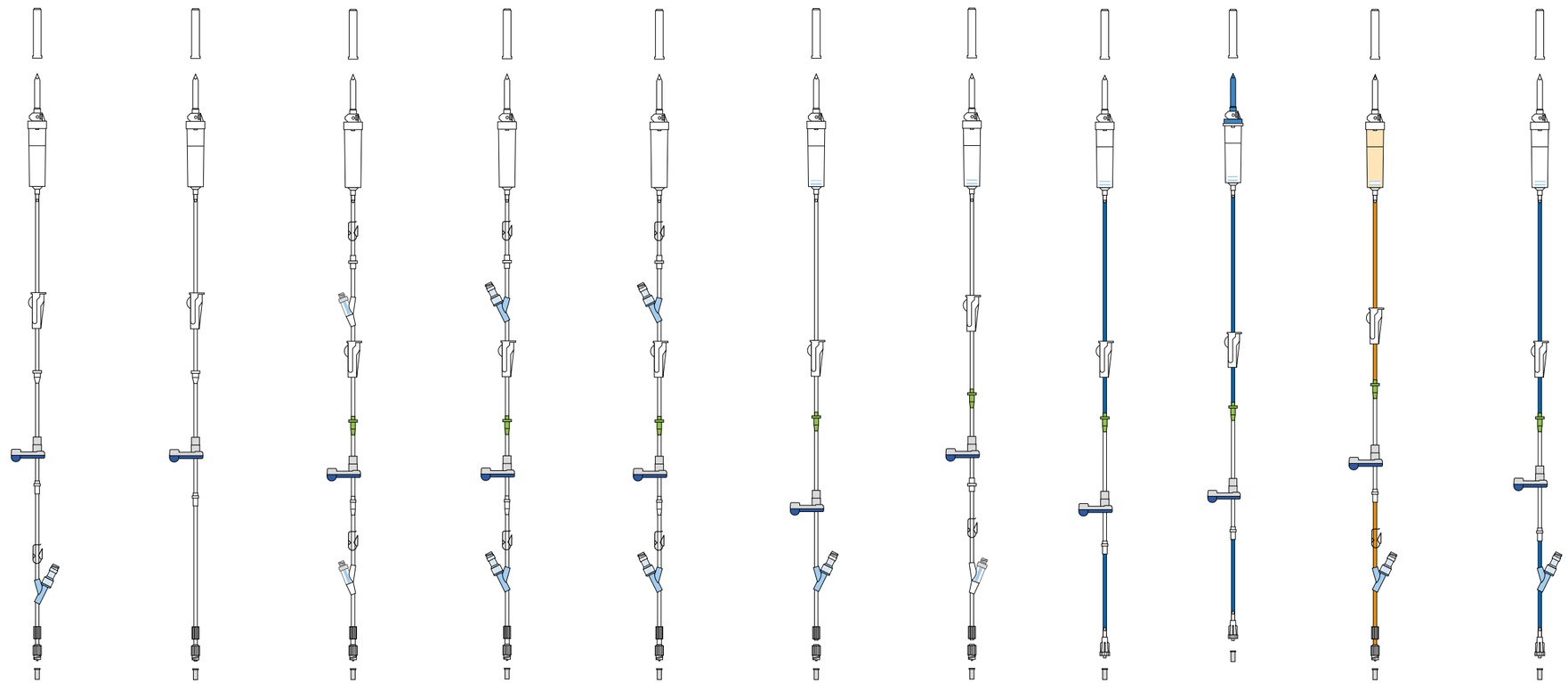
Volumat Lines
Special (SP)



DESIGNATION	VL SP02-PE (NAM)	VL SP10-PE (NAM)	VL SP40-11 (NAM)	VL SP40-11-PE (NAM)	VL SP42-PE (NAM)	VL SP62	VL SP62-1 (NAM)	VL SP90	VL SP90 AirBlock	VL SP91-PE	VL SP92
ARTICLE REFERENCE (PO 2023 - phased out 2023, PI - Phased in)	**M46441995** (PI)	**M46441395** (PI)	**M46445475**	**M46445495** (PI)	**M46444495** (PI)	**M46443400S** (PO 2023) **M46443400Y** (PI)	**M46443450**	**M46443500S**	**M46443510** (PI)	**M46444904** (PO 2023) **M46444904Y** (PI)	**M46443600S** (PO 2023) **M46443600SAP** (PO 2023) **M46443600Y** (PI)
SPIKE ● Vented / ● Non-vented / freeflex®	●	●	●	●	●	●	●	●	●	●	●
PORE SIZE OF DRIP CHAMBER FILTER	-	-	-	-	-	15 µm	-	15 µm	4 µm	15 µm	15 µm
ANTI-BACTERIA AIR ELIMINATING FILTER	-	-	-	-	-	-	-	-	-	-	-
PRIMING VOLUME	27.2 ml	27 ml	21.5 ml	21.3 ml	27.3 ml	26 ml	26.3 ml	26 ml	26 ml	25.7 ml	26.4 ml
LENGTH DOWNSTREAM	~165 cm	~165 cm	~120 cm	~120 cm	~165 cm	~165 cm	~160 cm	~165 cm	~165 cm	~145 cm	~170 cm
MAIN MATERIALS (TUBE)	PE	PE	PP	PE	PE	PUR	PUR	PUR	PUR	PE	PUR
SPECIAL CHARACTERISTICS	K-Zero, Rotating male luer, PE-Material	Rotating male luer, PE-Material	K-Nect, Rotating male luer, PVC-free	K-Zero, Rotating male luer, PE-Material	K-Zero, Rotating male luer, PE-Material	K-Zero (M46443400Y), Rotating male luer, PVC-free	K-Nect, Rotating male luer, PVC-free	Light protected, PVC-free	AirBlock, light protected, PVC-free	K-Zero (M46444904Y), Rotating male luer, light protected, PE-Material	K-Zero (M46443600Y) light protected, PVC-free

Product Codes: AP – Asia Pacific, CB/CN – China, SA – South America (Brazil), NAM - North America. Specific product codes indicate that the articles are labeled according to regional requirements.

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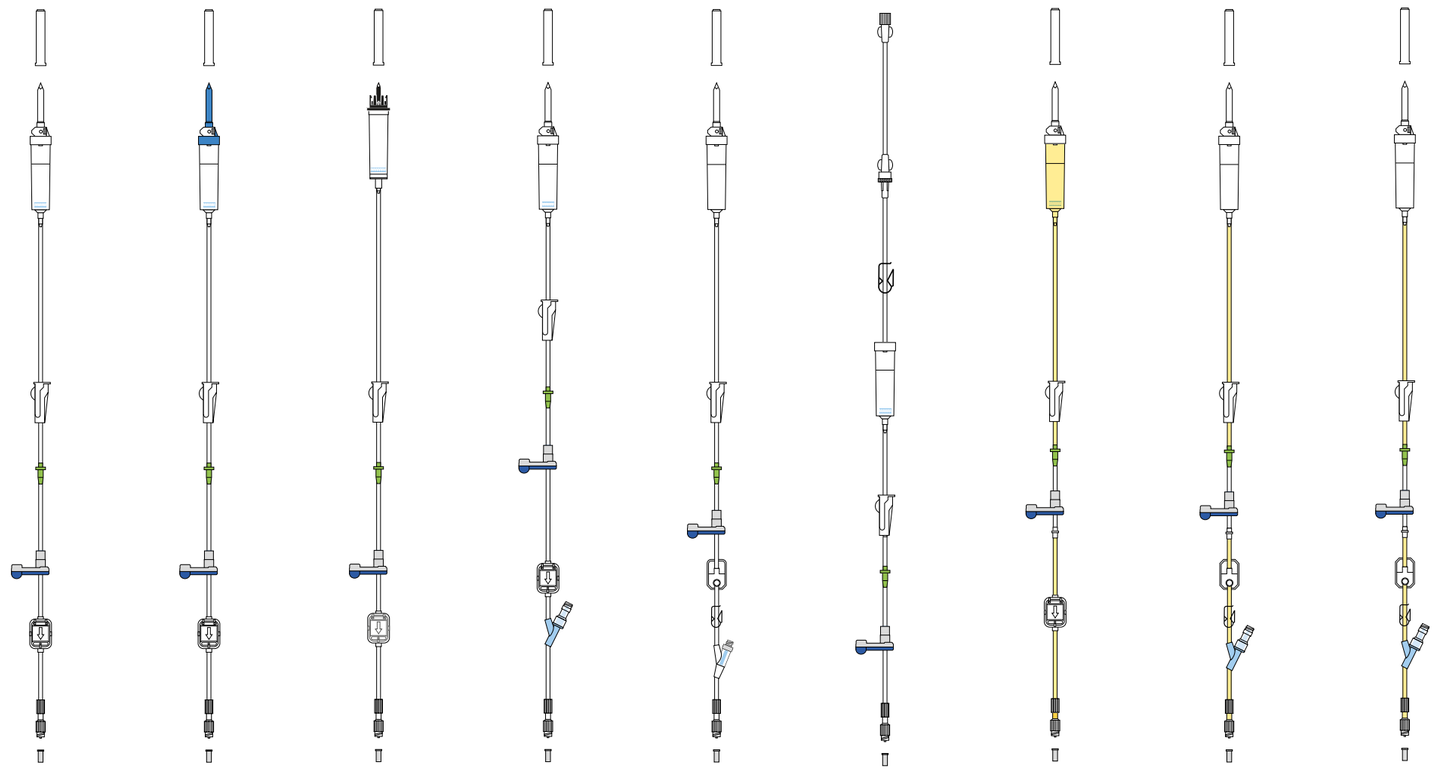
Volumat Lines

Parenteral Nutrition (PN)



DESIGNATION	VL PN00	VL PN00 AirBlock	VL PN00 FX	VL PN02	VL PN02-1 (NAM)	VL PN20	VL PN93	VL PN95	VL PN96
ARTICLE REFERENCE (PO 2023 - phased out 2023, PI - Phased in)	**M46444300S** **M46444300SAP** **M46444300SCB**	**M46444315** (PI)	**M46442300S**	**M46444400S** (PO 2023) **M46444400Y** (PI)	**M46442460**	**M46443700S**	**M46444350**	**M46444370** (PI)	**M46444380** (PI)
SPIKE ● Vented / ● Non-vented / freeflex®	●	●	freeflex®	●	●	-	●	●	●
PORE SIZE OF DRIP CHAMBER FILTER ■ Inline	15 µm	4 µm	15 µm	15 µm	-	15 µm	15 µm	-	-
ANTI-BACTERIA AIR ELIMINATING FILTER	1.2 µm	1.2 µm	1.2 µm	1.2 µm	1.2 µm	-	1.2 µm	0.2 µm	1.2 µm
PRIMING VOLUME	28.3 ml	28.3 ml	24.9 ml	28.8 ml	29.3 ml	22.5 ml	28.4 ml	28.8 ml	28.8 ml
LENGTH DOWNSTREAM	~165 cm	~165 cm	~165 cm	~170 cm	~170 cm	~165 cm	~165 cm	~170 cm	~170 cm
MAIN MATERIALS (TUBE)	PVC	PVC	PVC	PVC	PVC	PVC	PUR	PUR	PUR
SPECIAL CHARACTERISTICS	Rotating male luer	AirBlock, Rotating male luer	Rotating male luer	K-Zero (M46444400Y), Rotating male luer	K-Nect, Rotating male luer	Rotating male luer	Light protected, PVC-free, Rotating male luer	Light protected, PVC-free, K-Zero, Rotating male luer	Light protected, PVC-free, K-Zero, Rotating male luer

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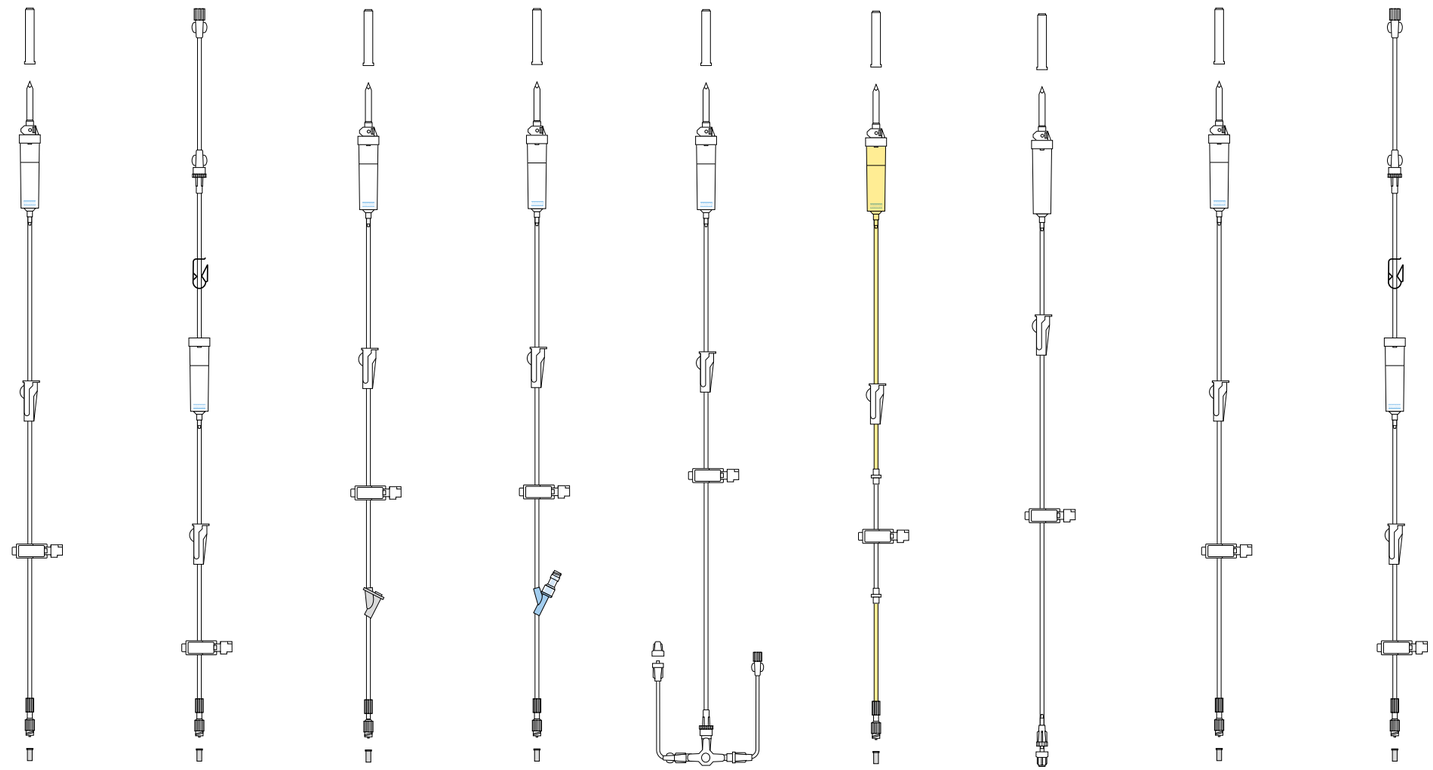

MS Sets

DESIGNATION	MS 10 DEHP-free	MS 20 DEHP-free	MS 30 DEHP-free	MS 31 DEHP-free	MS 35 DEHP-free	OP MS DEHP-free	MS 05	MS 10	MS 20
ARTICLE REFERENCE (PO - Phased out, PI - Phased in)	**Z072810F**	**Z072820F**	**Z072830F**	**Z072831F** (PO 2023) **M46430550Y** (PI)	**Z072835F** (PO 2023)	**Z072890F**	**Z072905F** (PO 2024)	**Z072910F** (PO 2024) **Z072910FSA** (PO 2024)	**Z072920F** (PO 2024)
SPIKE ● Vented / ● Non-vented / freeflex®	●	-	●	●	●	●	●	●	-
PORE SIZE OF DRIP CHAMBER FILTER ■ Inline	15 µm	15 µm	15 µm	15 µm	15 µm	15 µm	-	15 µm	15 µm
ANTI-BACTERIA AIR ELIMINATING FILTER	-	-	-	-	-	-	-	-	-
PRIMING VOLUME	25.1 ml	25.4 ml	25.3 ml	25.2 ml	33.0 ml	27.6 ml	21.7 ml	25.1 ml	25.4 ml
MAIN MATERIALS (TUBE)	PVC	PVC	PVC	PVC	PVC	PVC	PVC (DEHP)	PVC (DEHP)	PVC (DEHP)
SPECIAL CHARACTERISTICS	Rotating male luer	Rotating male luer	Rotating male luer	K-Zero (M46430550Y), Rotating male luer	-	Light protected, Rotating male luer	-	Rotating male luer	Rotating male luer

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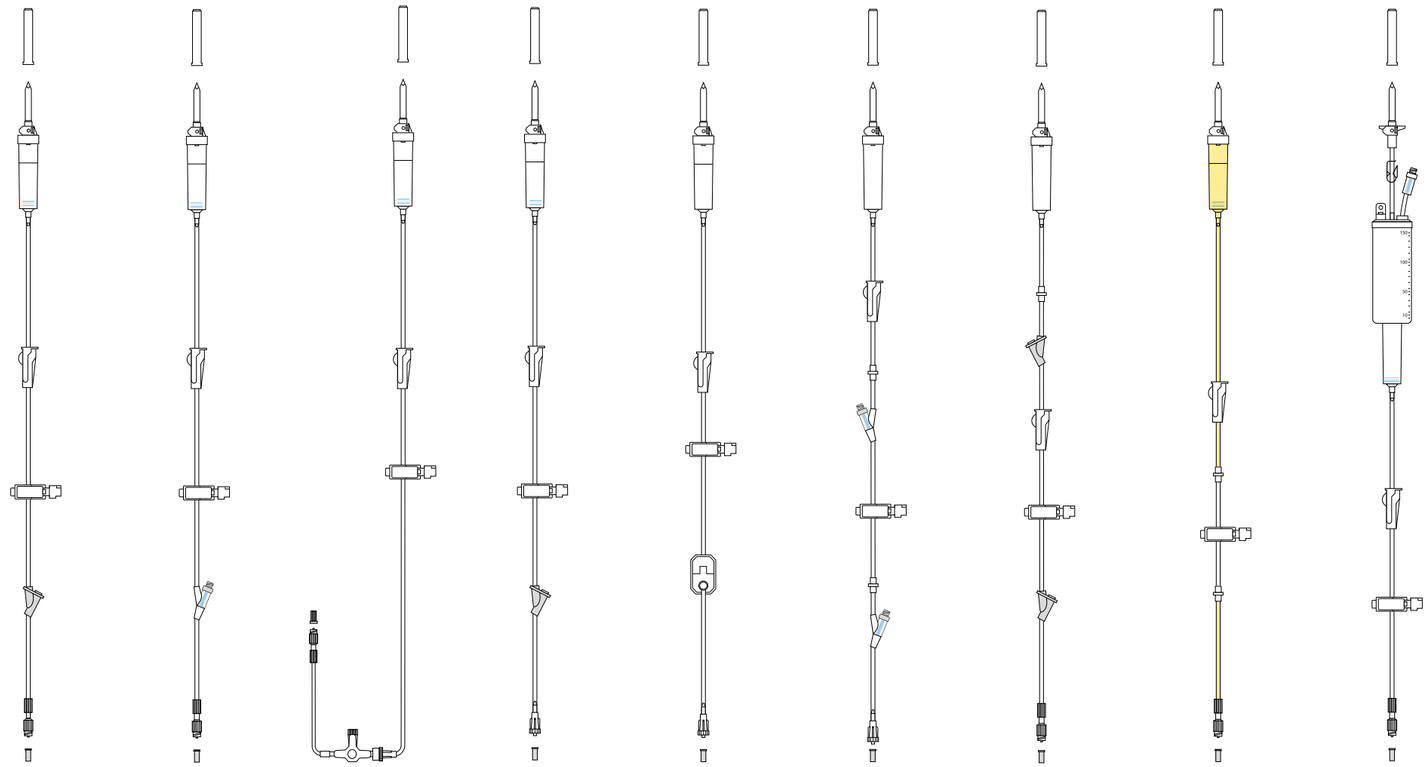

MS Sets

DESIGNATION	MS 30	MS 31	MS 33	MS 60	MS 70	MS 81	MS 82	OP MS	MS 95
ARTICLE REFERENCE (PO - Phased out, PI - Phased in)	**Z072930F** (PO 2024) **Z072930FSA** (PO 2024)	**Z072931F** (PO 2024)	**Z072933F** (PO 2024)	**Z072960F** (PO 2024)	**Z072970F**	**Z072981F** (PO 2023)	**Z072982F** (PO 2023)	**Z072990F** (PO 2024) **Z072990FSA** (PO 2024)	**Z072995F** (PO 2023)
SPIKE ● Vented / ● Non-vented / freeflex®	●	●	●	●	●	●	●	●	●
PORE SIZE OF DRIP CHAMBER FILTER ■ Inline	15 µm	15 µm	15 µm	15 µm	15 µm	15 µm	15 µm	15 µm	15 µm
ANTI-BACTERIA AIR ELIMINATING FILTER	-	-	-	-	0.2 µm	-	-	-	-
PRIMING VOLUME	25.3 ml	25.8 ml	25.5 ml	25.3 ml	26.5 ml	23.5 ml	25.3 ml	27.6 ml	24.7 ml
MAIN MATERIALS (TUBE)	PVC (DEHP)	PVC (DEHP)	PVC (DEHP)	PP	PP	PP, PUR	PVC (DEHP)	PVC (DEHP)	PVC (DEHP)
SPECIAL CHARACTERISTICS	Rotating male luer	K-Nect, Rotating male luer	Rotating male luer	PVC-free	PVC-free	K-Nect	Rotating male luer lock	Light protected, Rotating male luer	Burette, K-Nect, Rotating male luer lock

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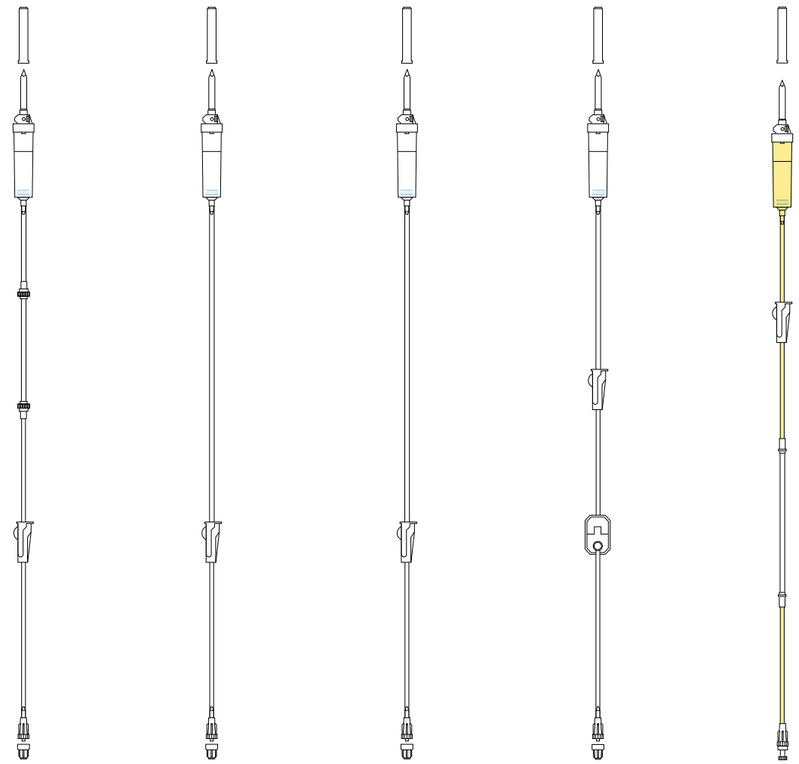

VS Sets

DESIGNATION	Intradrop Air VS	VS 10 DEHP-free	VS 10	VS 70	VS OP
ARTICLE REFERENCE (PO 2023 - phased out 2023, PO 2024 - phased out 2024)	**9001371** (PO 2023)	**Z072610F** (PO 2023)	**Z072710F** (PO 2024) **Z072710FAP** (PO 2024) **Z072710FCB** (PO 2024)	**Z072770F** (PO 2024)	**Z072790F** (PO 2024)
SPIKE ● Vented / ● Non-vented / freeflex®	●	●	●	●	●
PORE SIZE OF DRIP CHAMBER FILTER ■ Inline	15 µm	15 µm	15 µm	15 µm	15 µm
ANTI-BACTERIA AIR ELIMINATING FILTER	-	-	-	0.2 µm	-
PRIMING VOLUME	26.5 ml	23.1 ml	23.1 ml	26.2 ml	27.4 ml
MAIN MATERIALS (TUBE)	PVC	PVC	PVC (DEHP)	PP	PVC (DEHP)
SPECIAL CHARACTERISTICS	-	-	-	PVC-free	Light protected

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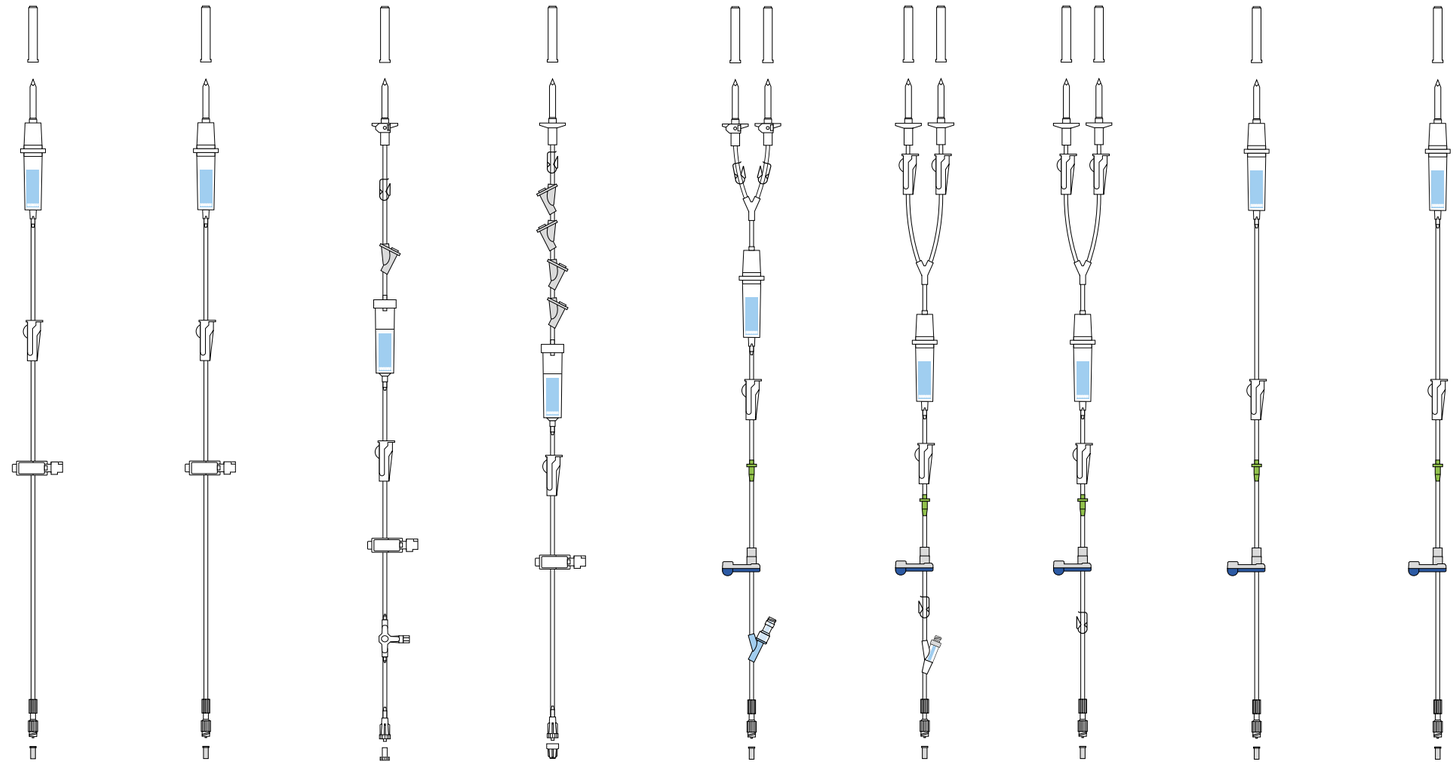

Volumat Lines

Transfusion (TR)

DESIGNATION	MS 50	MS 50T	MS 51	MS 64	VL SP22	VL SP22-0 (NAM)	VL SP22-00 (NAM)	VL TR00	VL TR00-0 (NAM)
ARTICLE REFERENCE (PO 2023 - phased out 2023, PI - Phased in)	**Z072950F** (PO 2024)	**Z072850F**	**Z072951F** (PO 2023)	**Z072964F** (PO 2023)	**M46443100S** (PO 2023) **M46443100Y** (PI)	**M46443160**	**M46443165** (PI)	**M46442800SAP** (PO 2023) **M46442800SCB** (PI) **M46442800S**	**M46442860**
SPIKE ● Vented / ● Non-vented / freeflex®	●	●	●	●	●	●	●	●	●
PORE SIZE OF DRIP CHAMBER FILTER	200 µm	200 µm	200 µm	200 µm	200 µm	200 µm	200 µm	200 µm	200 µm
ANTI-BACTERIA AIR ELIMINATING FILTER	-	-	-	-	-	-	-	-	-
PRIMING VOLUME	30.7 ml	30.7 ml	32.4 ml	34.2 ml	32.9 ml	33.5 ml	-	31.4 ml	31.4 ml
LENGTH DOWNSTREAM	-	-	-	-	~165 cm	~165 cm	-	~165 cm	~165 cm
MAIN MATERIALS (TUBE)	PVC (DEHP)	PVC	PVC (DEHP)	PUR, PP	PVC	PVC	PVC	PVC	PVC
SPECIAL CHARACTERISTICS	Rotating male luer	Rotating male luer	Stopcock	-	K-Zero (M46443100Y), Rotating male luer	K-Nect, Rotating male luer	Rotating male luer	Rotating male luer	Rotating male luer

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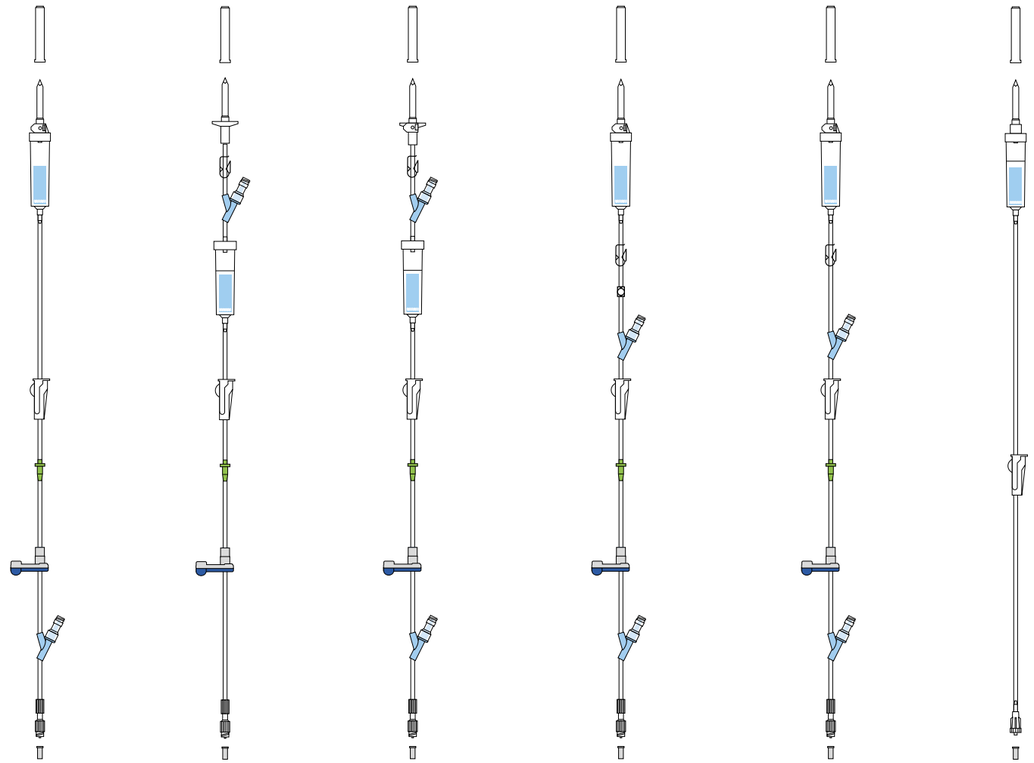

Volumat Lines

Transfusion (TR)

DESIGNATION	VL TR12	VL TR21	VL TR22	VL TR42	VL TR43	VS 50
ARTICLE REFERENCE (PO 2023 - phased out 2023, PI - Phased in)	**M46442700S** (PO 2023) **M46442700Y** (PI)	**M46446200S** (PO 2023) **M46446200Y** (PI)	**M46443000S** (PO 2023) **M46443000Y** (PI)	**M46442900S** (PO 2023) **M46442900Y** (PI)	**M46444500S** (PO 2023) **M46444500Y** (PI)	**Z072750F** (PO 2023)
SPIKE ● Vented / ● Non-vented / freeflex®	●	●	●	●	●	●
PORE SIZE OF DRIP CHAMBER FILTER	200 µm	200 µm	200 µm	200 µm	200 µm	200 µm
ANTI-BACTERIA AIR ELIMINATING FILTER	-	-	-	-	-	-
PRIMING VOLUME	33.1 ml	33.2 ml	33.4 ml	33.2 ml	33.2 ml	28.6 ml
LENGTH DOWNSTREAM	~165 cm	~165 cm	~165 cm	~165 cm	~165 cm	~165 cm
MAIN MATERIALS (TUBE)	PVC	PVC	PVC	PVC	PVC	PVC (DEHP)
SPECIAL CHARACTERISTICS	K-Zero (M46442700Y), Rotating male luer	K-Zero (M46446200Y), Rotating male luer	K-Zero (M46443000Y), Rotating male luer	K-Zero (M46442900Y), BCV, Rotating male luer	K-Zero (M46444500Y), BCV, Rotating male luer	-

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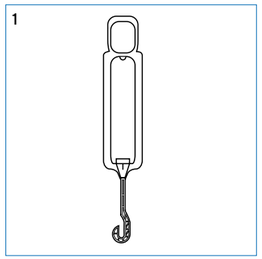
Gravity Infusion sets - Secondary Lines

Gravity infusion is 'manual' infusion, i.e. an application system that is not supported by active pumping or any additional pressure. This application is recommended when accurate infusion is not critically required.

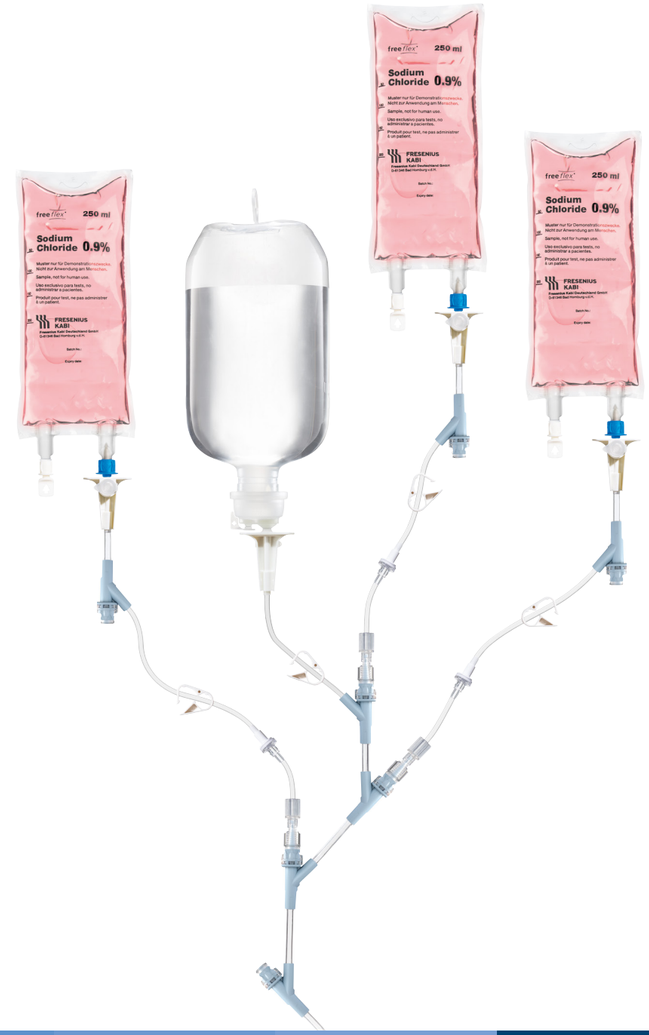
Secondary lines (short lines) are designed to be attached to primary lines via needle-free access. They are for multitherapy and sequential use. DEHP as a placticizer is not used.

Secondary lines are available in different configurations:

- freeflex connector for a tight and secure connection
- light protected for light sensitive drugs
- availability of hanger for prioritizing primary or secondary infusion (Fig. 1)
- antibacterial and air eliminating filter which provides additional protection against bacterial contamination



Illustrations not available for every product configuration.



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Gravity Infusion sets - Secondary Lines available features

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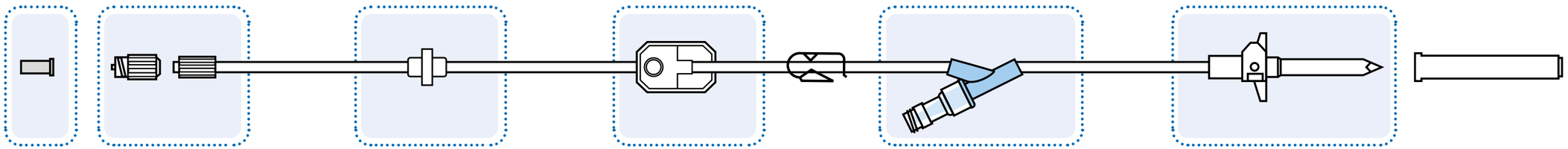

Flow-Stop cap:
Automatic prime stop from hydrophobic filter

Luer-Lock connector:
For connection to a primary line

Back-check valve (BCV):
to avoid backflow into the line

Infusion filter:
protects integrity and purity of infused drugs and solutions. Choice of pore size enable retention of particles and certain microorganisms**

Downstream Needle-free injection port

1. Intermittent injections of drugs not controlled by the pump
2. Reduce risk of needle stick injuries

K-Zero NEW

Spike:
Spike for connection of a secondary container

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*Information on retained microorganisms is available upon request.

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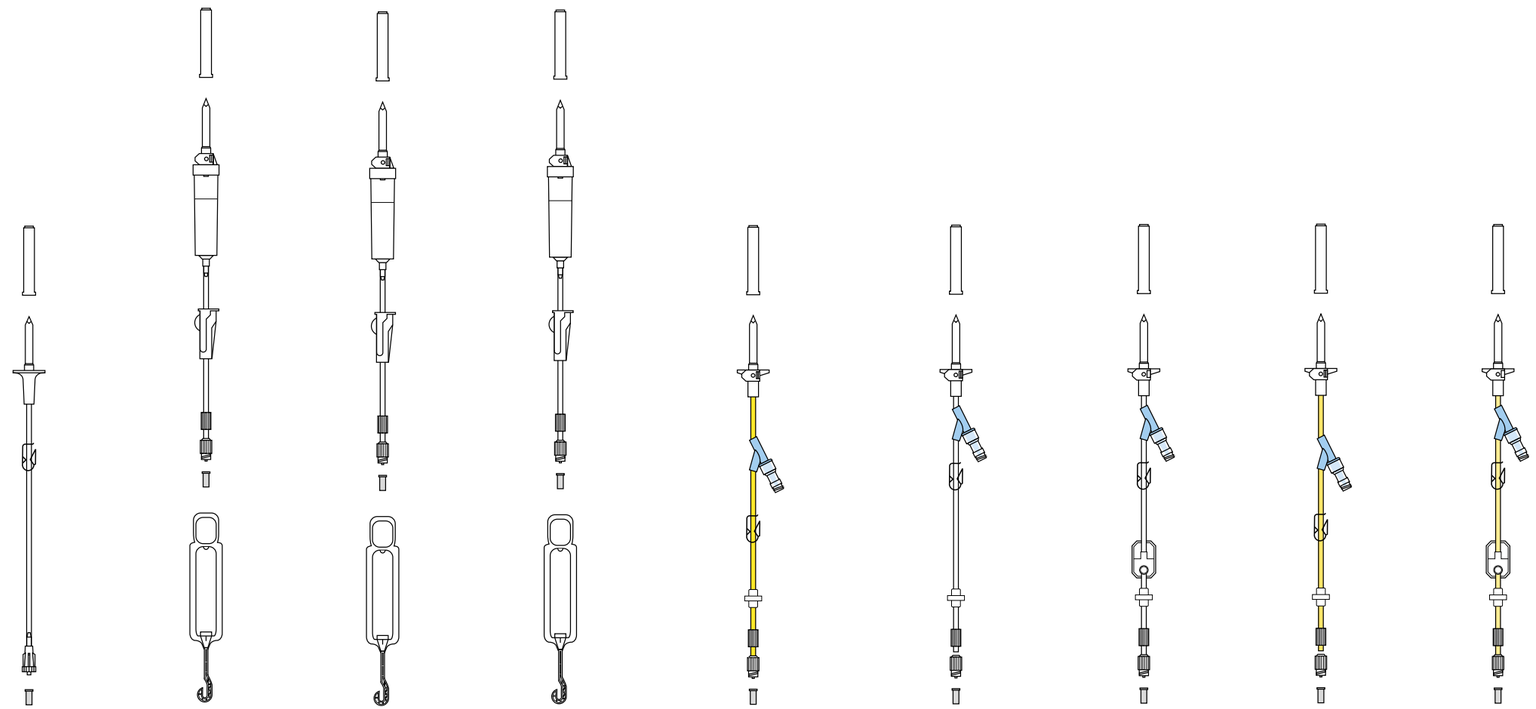

Secondary Lines

DESIGNATION	SL40 BCV	SL00-0 (NAM)	VL SL00-X0 (NAM)	VL SL00-XP (NAM)	SL OP IP	SL IP	SL Filter IP	SL OP PE	SL Filter PE
ARTICLE REFERENCE (PO 2023 - phased out 2023, PI - Phased in)	**M77460028**	**M77460030** **M77460034** (PI)	**M77460051**	**M77460052**	**M77460068** (PO 2023) **M77460068Y** (PI)	**M77460069** (PO 2023) **M77460069Y** (PI)	**M77460070** (PO 2023) **M77460070Y** (PI)	**M77460072** (PI)	**M77460073** (PI)
SPIKE ● Vented / ● Non-vented / freeflex®	●	●	●	●	●	●	●	●	●
PORE SIZE OF DRIP CHAMBER FILTER	-	-	-	-	-	-	-	-	-
ANTI-BACTERIA AIR ELIMINATING FILTER	-	-	-	-	-	-	0.2 µm	-	0.2 µm
PRIMING VOLUME	3.0 ml	12.4 ml	12.4 ml	11.0 ml	2.6 ml	2.6 ml	5 ml	3.3 ml	5.7 ml
LENGTH DOWNSTREAM	~40 cm	~80 cm	~80 cm	~60 cm	~35 cm	~35 cm	~35 cm	~35 cm	~35 cm
MAIN MATERIALS (TUBE)	PUR	PVC	PVC	PUR	PUR	PUR	PUR	PE	PE
SPECIAL CHARACTERISTICS	BCV, PVC-free	Rotating male luer	Rotating male luer	Rotating male luer, PVC-free	K-Zero (M77460068Y), BCV, Rotating male luer, Light-protected, PVC-free	K-Zero (M77460069Y), BCV, Rotating male luer, PVC-free	K-Zero (M77460070Y), BCV, Rotating male luer, PVC-free	K-Zero, BCV, Rotating male luer, Light-protected	K-Zero, BCV, Rotating male luer, Light-protected

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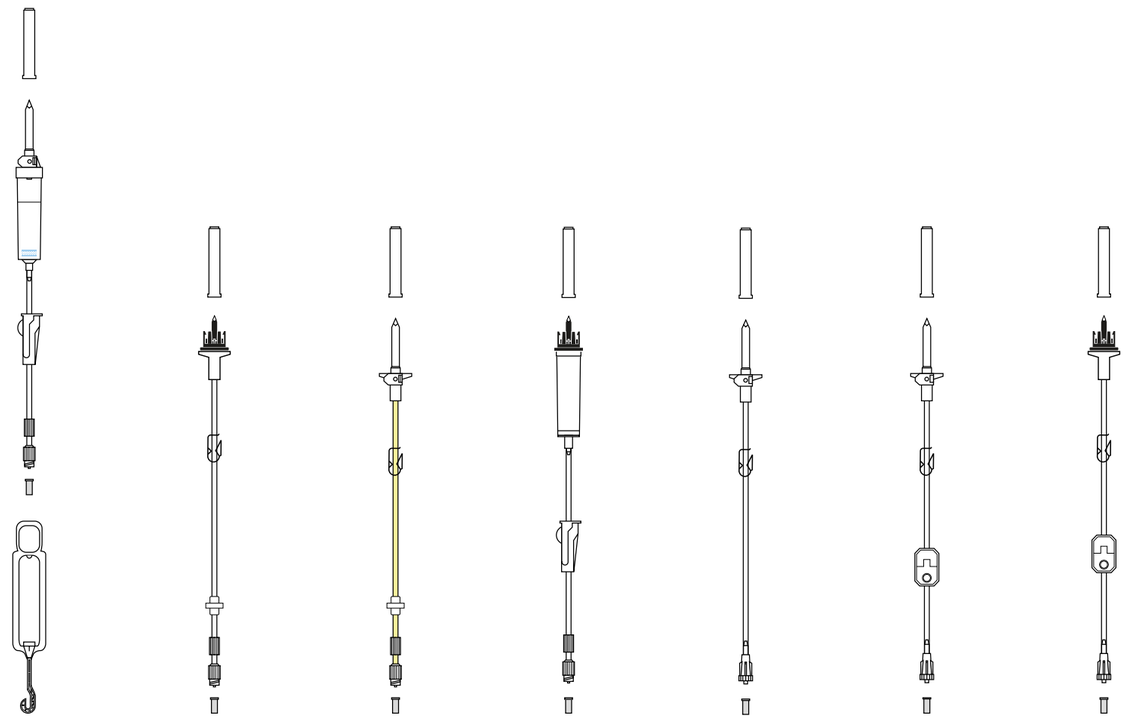

Secondary Lines

DESIGNATION	SL00 DC	SL00 FX	SL00 OP	SL20 FX-ND	SL	SL Filter	SL FX Filter
ARTICLE REFERENCE (PO 2023 - phased out 2023, PI - Phased in)	M77460037	M77460062	M77460065	M77460033	M77460020	M77460025	M77460026
SPIKE ● Vented / ● Non-vented / freeflex®	●	freeflex®	●	freeflex®	●	●	freeflex®
PORE SIZE OF DRIP CHAMBER FILTER ■ Inline	15 µm	-	-	-	-	-	-
ANTI-BACTERIA AIR ELIMINATING FILTER	-	-	-	-	-	0.2 µm	0.2 µm
PRIMING VOLUME	12.4 ml	2.6 ml	2.6 ml	6.9 ml	2.3 ml	5.4 ml	7.5 ml
LENGTH DOWNSTREAM	~80 cm	~35 cm	~35 cm	~50 cm	~30 cm	~40 cm	~70 cm
MAIN MATERIALS (TUBE)	PVC	PUR	PUR	PUR	PUR	PUR	PUR
SPECIAL CHARACTERISTICS	Rotating male luer	BCV, Rotating male luer, PVC-free	BCV, Rotating male luer, Light-protected, PVC-free	Rotating male luer, PVC-free	PVC-free	PVC-free	PVC-free

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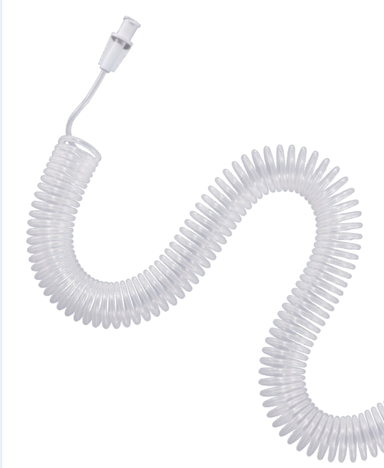
Pressure Infusion - Injectomat® Syringes and Lines

Injectomat syringes and lines are dedicated for syringe infusion pumps.

A wide range of different configurations are available:

- Injectomat syringes with/without light protection
- Injectomat lines for infusion and special applications such as anesthesia



*For the following chapter, more information regarding the specific filter type upon request available

FRESENIUS KABI
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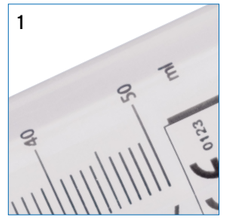
Pressure Infusion - Injectomat® Syringes

PVC FREE | LATEX FREE | DEHP FREE* | NEW

Three-part disposable syringes, with Luer Lock for a secure connection to infusion lines, for use with syringe pumps.

- Excellent sliding properties
  - Enhance the excellent delivery characteristics on approved syringe pumps
  - Resistance-free delivery of the medication
  - Enable problem-free application of the medication even at the smallest delivery rates
- Perceptible plunger stop
  - Prevents inadvertent removal of the plunger from the barrel of the syringe
  - Enables the medication to be routinely drawn up into the syringe
- Plunger with double sealing ring enables the medication to be smoothly drawn up into the syringe, providing safe and secure handling[3]
- High-contrast black scale markings enable precise control of the contents of the syringe (Fig. 1)
- Additional scale markings on the plunger (on the Injectomat syringe) facilitate quick control of the current contents of the syringe
- Light-proof tinting, orange: Absorbs light at a wavelength of: 200 – 520 nm[1]
- Enables visual control of the contents of the syringe
- Pressure resistance: 2 bar[4]



Illustrations not available for every product configuration.

FRESENIUS KABI
caring for life

PVC FREE | LATEX FREE | DEHP FREE* | NEW

Pressure Infusion - Injectomat® Syringes

Designation	Article reference	Needle		Materials fluid path		
		Size (G)	Length (mm)	Barrel	Cannula	Stopper
Injectomat® syringe 50ml, with cannula	M93000000 9000701 *(PO 2023)*	15	38 *(M93000000)* 40	PP	Stainless steel, PP	PI
Injectomat® syringe 50ml	M93000010 9000711 *(PO 2023)*	-	-	PP	-	PI
Injectomat® syringe 50ml, light protected with cannula	M93000020 *9000731 (PO 2023)*	15	38 *(M93000020)* 40	PP	Stainless steel, PP	PI

(PO 2023 - phased out 2023), PP - Polypropylene, PI - Polyisopren

Syringes has better grip for smoother drug delivery

FRESENIUS KABI
caring for life

Pressure Infusion - Injectomat® Lines for anesthesia

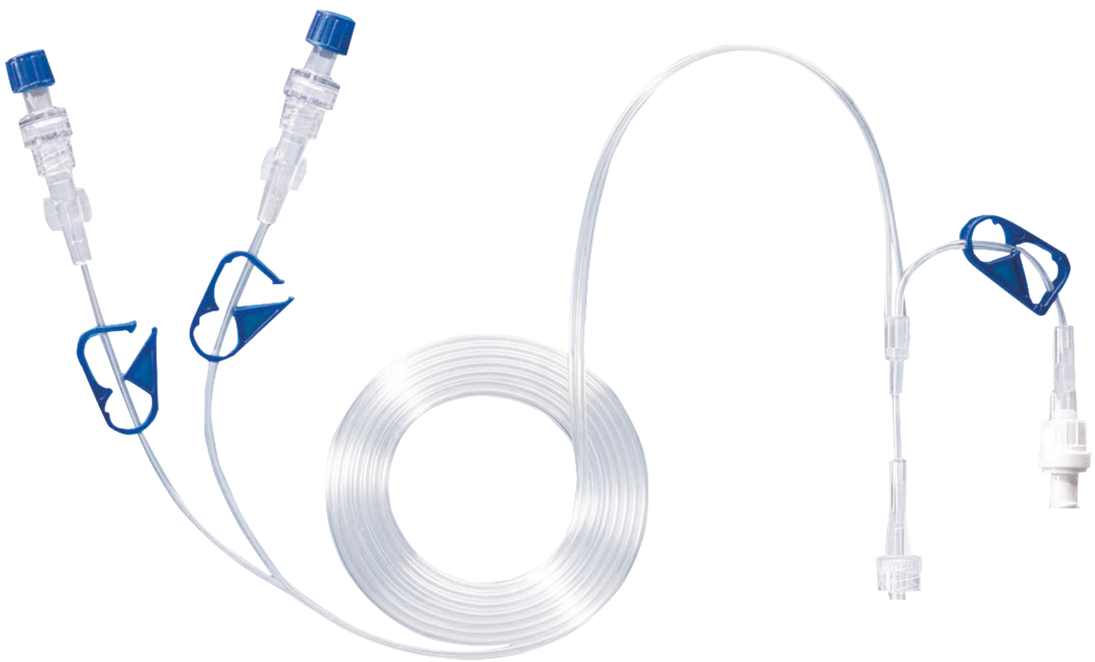
LATEX FREE
DEHP FREE*

Extension lines with integrated free flow protection, to maximise safety with critical drugs used in anesthesia

- Integrated free flow protection: Anti-siphon valve on female luer ports (Fig. 1): opening pressure 3 psi ± 1.5 psi (0.2 bar ± 0.1 bar)[1]
- Pressure resistance: 2 bar[4]

Dual lines for easy and safe combination of drugs anesthesia

- Back Check Valve on all female luer port to direct the drug flow (Fig. 2)
- Opening pressure 0.29 psi (0.02 bar)[1]
- Article reference 9004149 with anti-syphon valves (ASV) for safe TIVA and TIVA/TCI



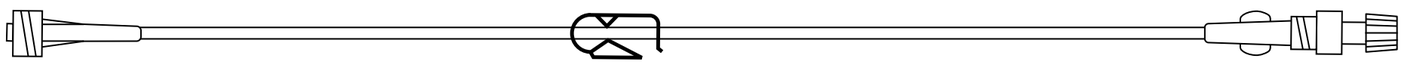
Illustrations not available for every product configuration.

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

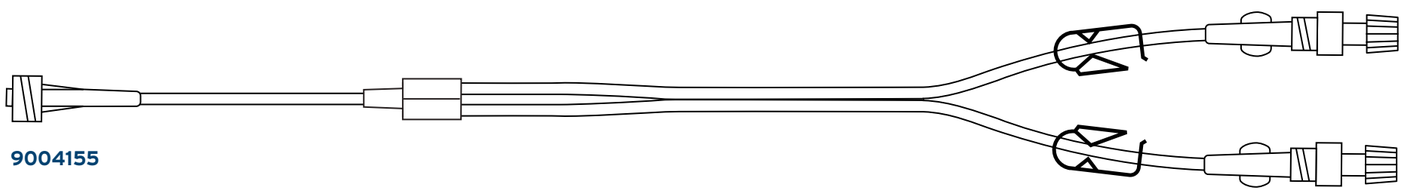
FRESENIUS KABI
caring for life

Pressure Infusion - Injectomat® Lines for anesthesia

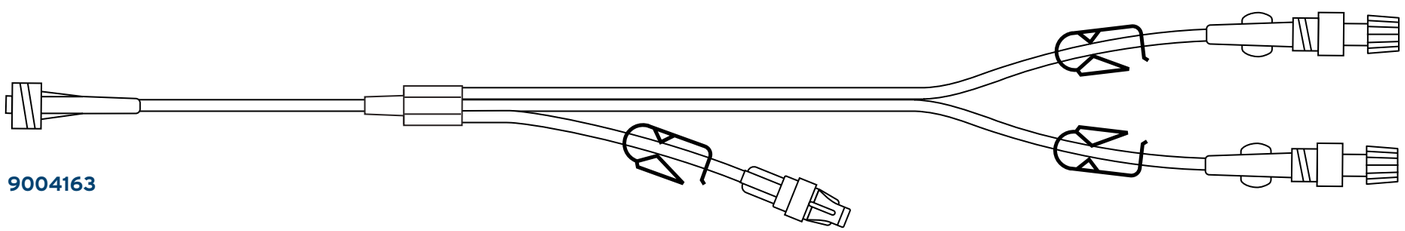
LATEX FREE
DEHP FREE*



9004149



9004155



9004163

Designation	Article reference	Tube		Filling volume (40°C) (mL/m)	Storage volume (40°C, 2bar) (ml/m)	Priming volume (mL)	Materials fluid path	
		Diameter (mm)	Length (cm)				Tube	Connector
Injectomat® line ASV	9004149	1.0 x 2.0	~200	0.8	0.9	1.6	PVC	PVC, PC
Injectomat® line TIVA Twin with ASV	9004155	1.0 x 2.0	~185	0.8	0.8	2.9	PVC	PVC, PC
Injectomat® line TIVA Twin Y with ASV and BCV	9004163	1.0 x 2.0	~185	0.8	0.8	2.9	PVC	PVC, PC

PVC - Polyvinyl chloride, PC - Polycarbonate

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

FRESENIUS KABI
caring for life

Pressure Infusion - Injectomat® Lines

LATEX FREE

Infusion lines for use with syringe pumps

- Also available with light-proof tinting for the application of light-sensitive medications:
  - Light-proof tinting, orange: Absorbs light at a wavelength of 200 – 450 nm
  - Enables visual control of the contents of the line
  - Light-proof tinting, black: Absorbs light at a wavelength of 200 – 900 nm
- Infusion lines **(PVC)**
- Infusion lines **(PE)**
  - Article reference 2888582, 9004312: with Back Check Valve (BCV, Fig. 1), e.g. for use with parallel infusions
- Pressure resistance: 2 bar[4]

Illustrations not available for every product configuration.

FRESENIUS KABI
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Pressure Infusion - Injectomat® Lines

LATEX FREE

Designation	Article reference	Tube		Filling volume (40°C) (mL/m)	Storage volume (40°C, 2bar) (mL/m)	Priming volume (mL)	Materials fluid path	
		Diameter (mm)	Length (cm)				Tube	Connectors
Injectomat® line	2888572	1.5 x 2.7	~300	1.8	2.0	5.3	PVC (DEHP)	PVC, MABS
Injectomat® line with BCV	2888582	1.5 x 2.7	~150	1.8	2.0	2.7	PVC (DEHP)	PVC, MABS
Injectomat® line	2888602 *(PO 2023)*	1.5 x 2.7	~45	1.8	2.0	0.8	PVC (DEHP)	PVC, MABS
Injectomat® line FD (fine dosing), DEHP-free	9000973	0.6 x 2.7	~150	0.3	0.4	0.4	PVC	PVC, MABS
Injectomat® line	9004112, 9004112AP *(PO 2023)*	1.0 x 2.0	~50	0.8	0.8	0.4	PE	PE
Injectomat® line	9004122	1.0 x 2.0	~100	0.8	0.8	0.8	PE	PE
Injectomat® line PE	9004132, 9004132AP *(PO 2023)* 9004132CB *(PI)*, 9004132CN *(PI)*	1.0 x 2.0	~150	0.8	0.8	1.2	PE	PE
Injectomat® line	9004142, 9004142AP *(PO 2023)* 9004142CB *(PI)*, 9004142CN *(PI)*	1.0 x 2.0	~200	0.8	0.8	1.6	PE	PE
Injectomat® line	9004152AP *(PO 2023)*, 9004152	1.0 x 2.0	~250	0.8	0.8	2.0	PE	PE
Injectomat® line	9004162	1.0 x 2.0	~300	0.8	0.8	2.4	PE	PE
Injectomat® line, orange	9004172	1.0 x 2.0	~150	0.8	0.8	1.2	PE	PE
Injectomat® line, orange	9004182	1.0 x 2.0	~200	0.8	0.8	1.6	PE	PE
Injectomat® line, black	9004192	1.0 x 2.0	~150	0.8	0.8	1.2	PE	PE
Injectomat® line, black	9014102	1.0 x 2.0	~200	0.8	0.8	1.6	PE	PE
Injectomat® line, orange, DEHP-free	9004212	1.5 x 2.7	~150	1.8	2.1	2.7	PVC	PVC, MABS
Injectomat® line, orange, DEHP-free	9004222	1.5 x 2.7	~200	1.8	2.1	3.5	PVC	PVC, MABS
Injectomat® line	9004242	1.5 x 2.7	~150	1.8	2.0	2.7	PVC (DEHP)	PVC, MABS
Injectomat® line, DEHP-free	9004248	1.5 x 2.7	~150	1.8	2.1	2.7	PVC	PVC, MABS
Injectomat® line with BCV	9004312	1.0 x 2.0	~150	0.8	0.8	1.2	PE	PE
Injectomat® line	9014342	1.5 x 2.7	~200	1.8	2.0	3.5	PVC (DEHP)	PVC, MABS
Injectomat® line	9004442	1.5 x 2.7	~250	1.8	2.0	4.4	PVC (DEHP)	PVC, MABS

(PO 2023 - phased out 2023, PI - Phased in), Product Codes: AP - Asia Pacific, CB/CN - China, SA - South America (Brazil)
PVC - Polyvinyl chloride, MABS - Methylmethacrylate Acrylonitrile Butadiene Styrene, PE - Polyethylene

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

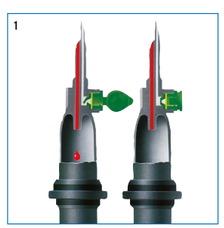
FRESENIUS KABI
caring for life

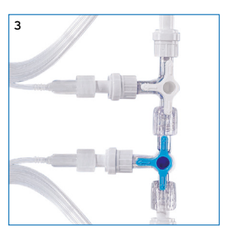
LATEX FREE

Gravity Infusion set - TIVA-Drop Air-matic P

Infusion system for TIVA with automatic air-vent and Air-matic valve

- Compatible, pre-connected application systems for improved safety with total intravenous anaesthesia
- Gravity Infusion set with side lines for application with syringe pump
  - Integrated, sealable, automatic air-vent system with hydrophobic bacteria filter
  - Air-matic valve (Fig. 1) protects the air filter from contact with the infusion solution
  - The valve/filter combination facilitates venting, especially in the case of lipid and alcohol solutions, and simplifies handling. This ensures that the bacteria filter will not get wet and become clogged. The additional flap protects the bacteria filter against damage
  - Fluid filter for the retention of particles > 15 µm
  - Terminal Back Check Valve as a protection feature to avoid backflow and parallel infusion into infusion system, e.g. retrograde delivery of infusion solutions during gravity infusion (Fig. 2)
- Two PE feed lines (diameter 1.0 x 2.0 mm, length 150 cm) for syringe pumps with upstream Back Check Valves
- PE patient feed line (diameter 1.0 x 2.0 mm, length 15 cm) with upstream Back Check Valve
- Two 3-way Stopcocks – more resistant to lipids and alcohol solutions (Fig. 3)





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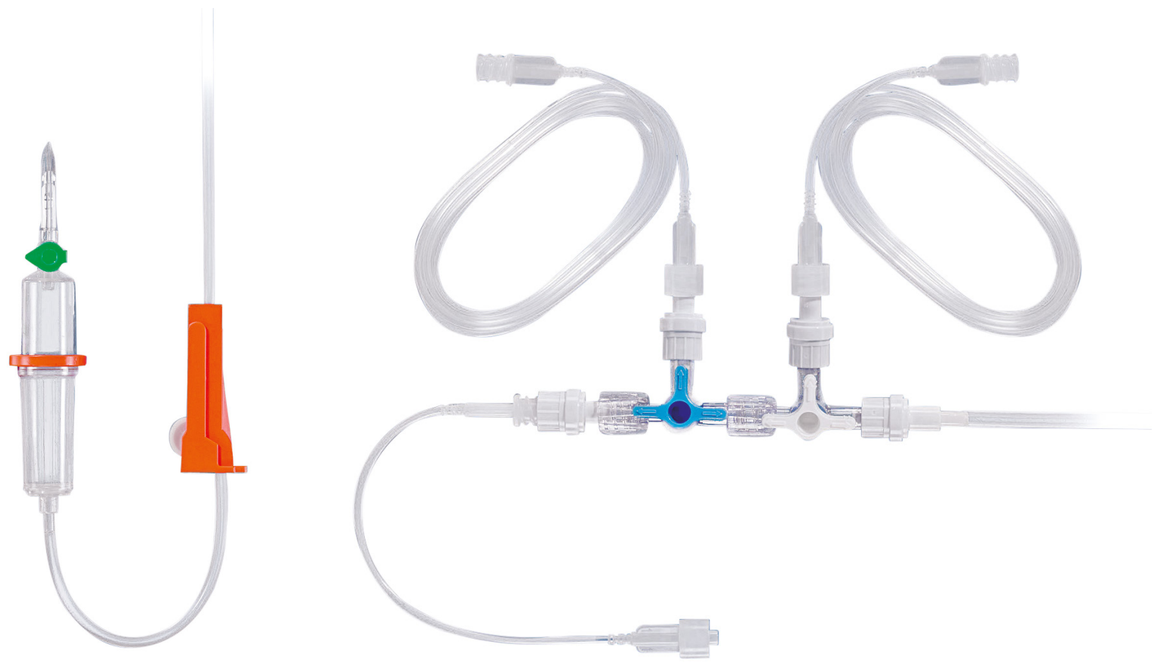
Gravity Infusion set - TIVA-Drop Air-matic P

LATEX FREE



Designation	Article reference	Spike	Drops (ml)	DC pore size filter (µm)	Set length (cm)	Max. pressure (bar)[10]	Filling volume (40°C) (mL/m)	Storage volume (40°C, 2bar) (mL/m)	Priming volume (mL)	Materials fluid path: Drip Chamber	Materials fluid path: Tube	Materials fluid path: Stopcock	Materials fluid path: Connector
TIVA-Drop Air-matic P	8590982, 8590982CB, 8590982AP *(PO 2023)*	Vented	20	15	165	2	7.1	8.5	21.2	PS, PA	PVC (DEHP), PE	PSU	PE

(PO 2023 - phased out 2023), PS - Polystyrene, PA - Polyamide, PVC - Polyvinyl chloride, PE - Polyethylene, PSU - Polysulfone. Product Codes: AP - Asia Pacific, CB/CN - China

FRESENIUS KABI
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Extension lines for specific application

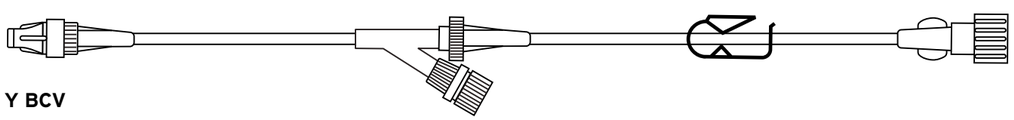
LATEX FREE

Extension Y BCV

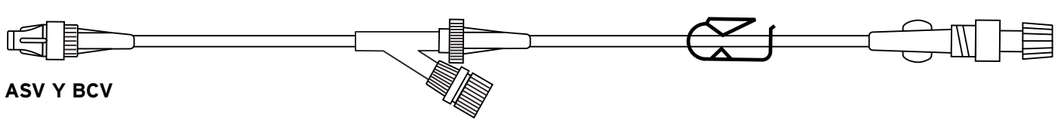
- Transparent extension line in PVC
- Y luer connector
- equipped with Back Check Valve (BCV) for infusion
- pressure resistance up to 2 bar

Extension ASV Y BCV

- Transparent extension line in PVC with anti-siphon valve (ASV)
- Y luer connector
- equipped with Back Check Valve (BCV)
- pressure resistance up to 2 bar



Y BCV



ASV Y BCV

Spiral lines

PVC FREE LATEX FREE DEHP FREE*

Infusion lines for use with syringe pumps

- Greater freedom of movement for patient and personnel with elastic, flexible line (Fig. 1)
- Line material: Polyethylene to ensure no interaction with the medication
- Pressure-resistant up to 2 bar [4]

Illustrations not available for every product configuration.

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

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Extension lines for specific application

LATEX FREE

Designation	Article reference	Tube: Length (cm)	Tube: Diameter (mm)	Filling volume (40°C) (mL/m)	Storage volume (40°C, 2bar) (mL/m)	Priming volume (mL)	Materials fluid path: Tube	Materials fluid path: Connector	Materials fluid path: BCV	Materials fluid path: ASV
Extension SE 1400S *(PO 2023)*	Z072016F	~150	0.9 x 2.0	0.7	0.8	1.1	PVC (DEHP)	PVC	-	-
Extension Y BCV	Z072025F	~170	1.0 x 2.0 3.0 x 4.1	0.8	0.9	2.5	PVC	PVC, MABS	Silicone, SAN	-
Extension ASV Y BCV	Z072039F	~170	1.0 x 2.0 3.0 x 4.1	0.8	0.9	2.5	PVC	PVC, MABS	Silicone, SAN	Silicone, PC

PO - Phased out. PVC - Polyvinyl chloride, MABS - Methylmethacrylate Acrylonitrile Butadiene Styrene, SAN - Styrene acrylonitrile resin, PC - Polycarbonate

Spiral lines

PVC FREE LATEX FREE DEHP FREE*

Designation	Article reference	Tube: Diameter (mm)	Tube: Length (cm)	Filling Volume (40°C) (ml])	Materials fluid path: Tube	Materials fluid path: Connector
Spiral line	9001515	1.0 x 2.0	600	4.8	LDPE	HDPE
Spiral line	9001516	1.0 x 2.0	150	1.5	LDPE	HDPE

LDPE - Low density polyethylene, HDPE - High density polyethylene

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

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Ambulatory Infusion Systems

The main components of ambulatory infusion therapy are pumps, sets and accessories. The pumps are used to give a volume of fluids (parenteral nutrition, standard solutions or antibiotics) through an IV access. The intended patient population are children and adults. For safety and efficacy reasons infusion given in the home setting must be assisted by a pump.

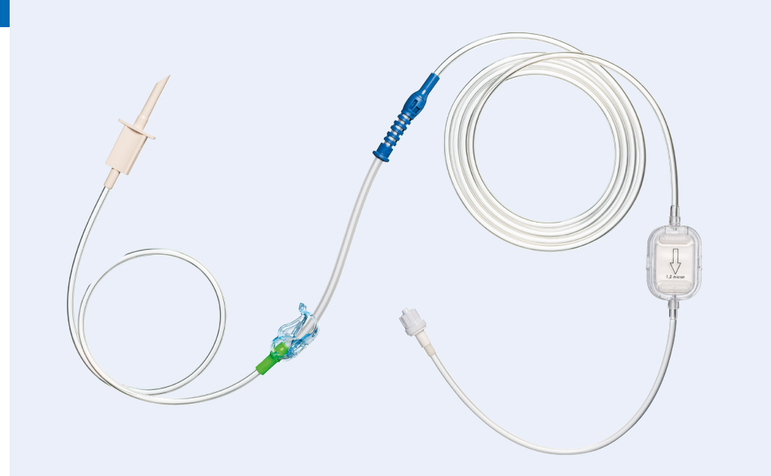
ESPEN delivered in March 2020 a new guideline on home parenteral nutrition and there is a strong consensus agreement by medical experts on the fact that Home Parenteral Nutrition (HPN) should be administered using an infusion pump for safety and efficacy reasons.*

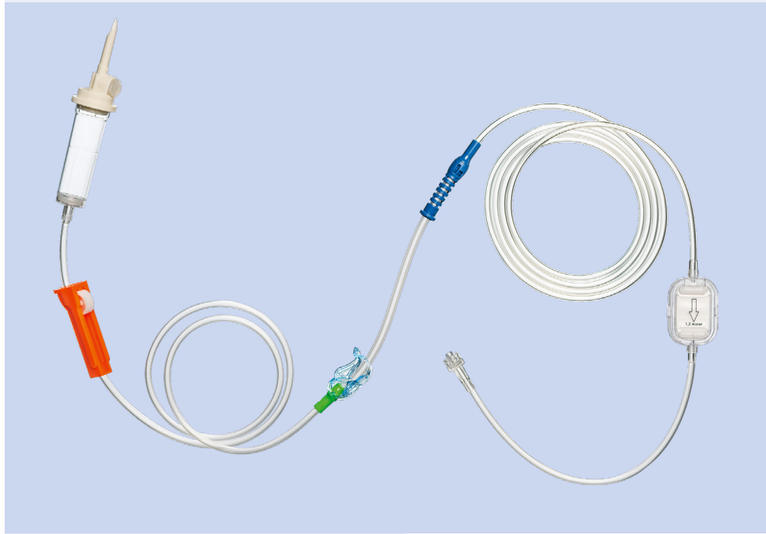
Fresenius Kabi offers a complete dedicated portfolio which enables patients to stay independent and mobile during their daily challenges.

The portfolio includes:

- Ambix act*iv***
- Ambix nova
- Ambix accessories (Backpacks and Trolley)

The administration sets differ on the pump segment to avoid confusion and compatibility problems when using Ambix act*iv* and Ambix nova pumps.





*ESPEN guideline on home parenteral nutrition, Pironi L et al., ESPEN guideline on home parenteral nutrition, Clinical Nutrition.
**Pump not available anymore. Sets are still available.

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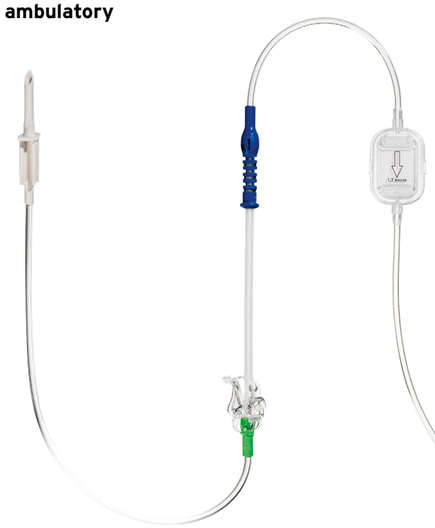
Ambulatory Infusion Systems - Ambix act*iv* sets

LATEX FREE
DEHP FREE*

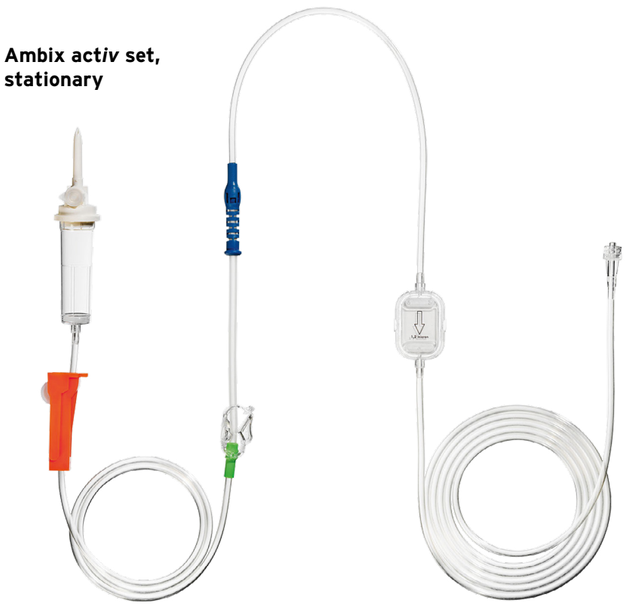
Infusion sets with safety clamp for use with the Ambix act*iv* portable, electronic infusion pump

- Safety clamp to protect against free flow (Fig. 1)
- Low protein binding 1.2 µm filter with PES membrane for the retention of particles and removal of air[1]
- Integrated kink protection and kink-resistant line (Fig. 2)
- Flow-Stop cap enables safe and easy pre-filling[1] (Ambix act*iv* ambulatory) (Fig. 3)

Ambix act*iv* set, ambulatory



Ambix act*iv* set, stationary



Illustrations not available for every product configuration.

Designed for being active

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

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Ambulatory Infusion Systems - Ambix activ sets

LATEX FREE
DEHP FREE*

Designation	Article reference	Drip chamber	Drops (ml)	Drip chamber filter: Pore size (µm)	Drip chamber filter: Materials	In-line filter: Surface area (cm²)	In-line filter: Membrane pore size (µm)	In-line filter: Materials (membrane)	Max. pressure (bar)	Filling Volume (40°C) (mL/m)	Storage Volume (40°C, 2bar) (mL/m)	Priming volume (mL)	Set length (cm)	Materials fluid path: DC	Materials fluid path: Spike	Materials fluid path: Tube	Materials fluid path: BCV	Materials fluid path: Connector	Special characteristics
Ambix activ stationary set	2892098	Vented	20	15	PA	10	Fluid: 1.2 Air-vent: 0.03	Fluid: PES Air-vent: PTFE	2	4.9	5.4	26.7	~295	PS	-	PVC	-	MABS	-
Ambix activ ambulatory set	2892100	-	-	-	-	10	Fluid: 1.2 Air-vent: 0.03	Fluid: PES Air-vent: PTFE	2	4.9	5.4	16.9	~280	-	ABS	PVC	MABS, SAN, Silicone	-	Back check valve (BCV), Flow-Stop cap

PA - Polyamide, PTFE - Polytetrafluoroethylene, PES - Polyether sulphone, PVC - Polyvinyl chloride, MABS - Methylmethacrylate Acrylonitrile Butadiene Styrene, ABS - Acrylonitrile butadiene styrene, SAN - Styrene acrylonitrile resin

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

FRESENIUS KABI
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Ambulatory Infusion Systems – Ambix nova sets

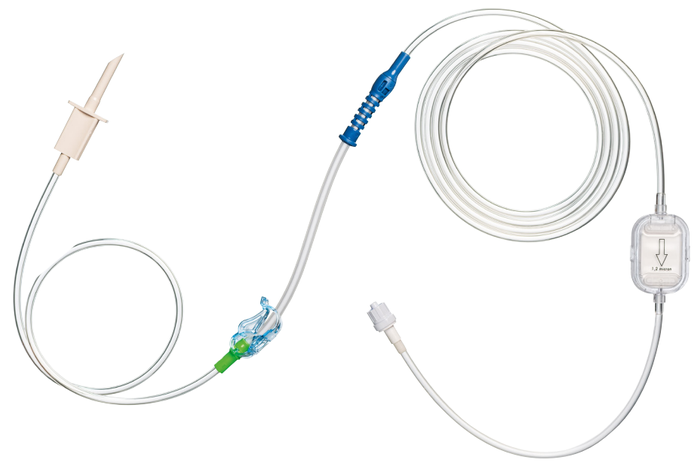
LATEX FREE | DEHP FREE* | NEW

Ambix nova is indicated for intravenous (IV) administration of parenteral nutrition, standard solutions and antibiotic therapy, designed with a dedicated colour set, for an easy and rapid everyday use.

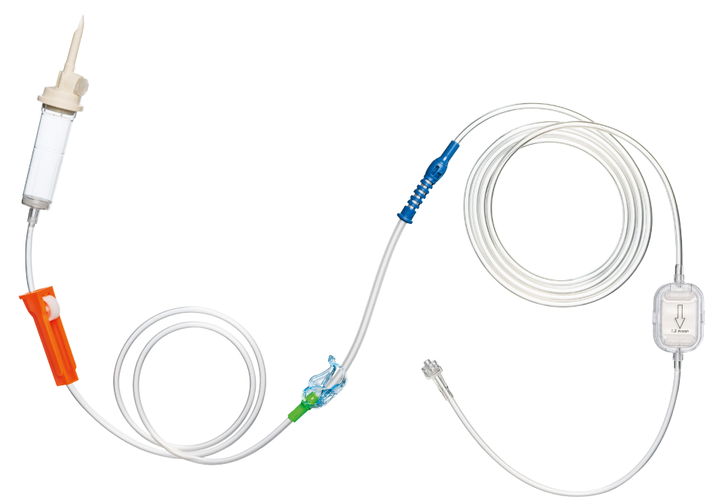
Infusion sets with safety clamp for use with the Ambix nova portable, electronic infusion pump

- Safety clamp to protect against free flow (Fig. 1)
- Low protein binding 1.2 µm filter with PES membrane for the retention of particles and removal of air[1]
- Integrated kink protection and kink-resistant line (Fig. 2)
- Flow-Stop cap enables safe and easy pre-filling[1] (Fig. 3)

Ambix nova set, ambulatory



Ambix nova set, stationary



Illustrations not available for every product configuration.

Inspired by patient's lives

FRESENIUS KABI
caring for life

Ambulatory Infusion Systems - Ambix nova sets

LATEX FREE | DEHP FREE* | NEW

Designation	Article reference	Drip chamber	Drops (ml)	Drip chamber filter: Pore size (µm)	Drip chamber filter: Material	In-line filter: Surface area (cm²)	In-line filter: Membrane pore size (µm)	In-line filter: Materials (membrane)	Max. pressure (bar)	Filling Volume (40°C) (mL/m)	Storage Volume (40°C, 2bar) (mL/m)	Priming volume (mL)	Set length (cm)	Materials fluid path: DC	Materials fluid path: Spike	Materials fluid path: Tube	Materials fluid path: BCV	Materials fluid path: Connector	Special characteristics
Ambix nova stationary set	M46421910	Vented	20	15	PA	10	Fluid: 1.2 Air-vent: 0.03	Fluid: PES Air-vent: PTFE	2	4.9	5.4	26.9	~300	PS	-	PVC	-	MABS	-
Ambix nova ambulatory set	M46421820	-	-	-	-	10	Fluid: 1.2 Air-vent: 0.03	Fluid: PES Air-vent: PTFE	2	4.9	5.4	17.1	~285	-	ABS	PVC	MABS, SAN, Silicone	-	Back check valve (BCV), Flow-Stop cap

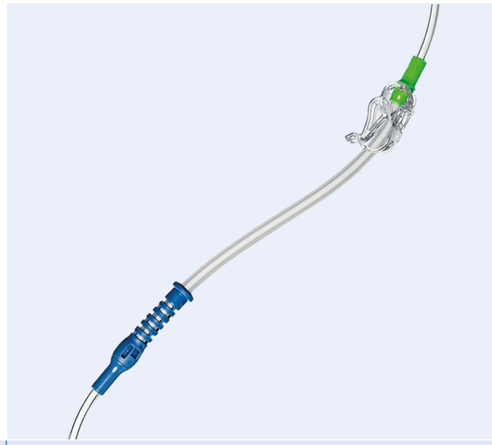
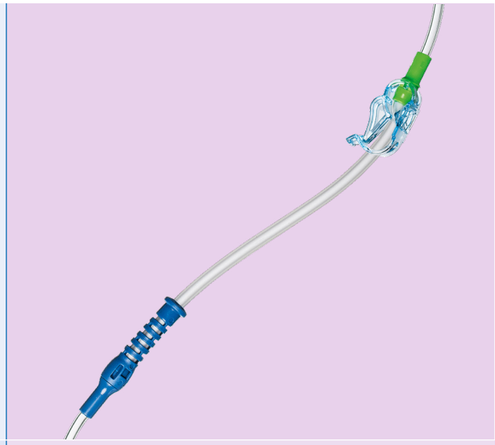
PA - Polyamide, PES - Polyether sulphone, PTFE - Polytetrafluoroethylene, PS - Polystyrene, PVC - Polyvinyl chloride, MABS - Methylmethacrylate Acrylonitrile Butadiene Styrene, SAN - Styrene acrylonitrile resin, ABS - Acrylonitrile butadiene styrene

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

FRESENIUS KABI
caring for life

Ambulatory Infusion Systems - Ambix Accessories

LATEX FREE
DEHP FREE*

	Ambix activ sets	Ambix nova sets
		
Clamp	Transparent	Blue
Length pump segment	93 mm	115 mm
Compatible pumps	Ambix activ	Ambix nova

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

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Ambulatory Infusion Systems - Ambix Accessories

Backpacks for Ambix act*iv*/Ambix nova pumps and sets are available to support patient's mobility. Additionally, a trolley is now available for the newest backpacks (Ambix nova), to ease transportation of complete Ambulatory Infusion System.

Ambix nova backpacks show following improved features in comparison to predecessor backpacks (Ambix act*iv*):

- Polyester materials – sturdy material for daily challenges (dirt & water repellent)
- Mesh design – easy checking of PN bag (Fig. 1)
- Smartphone case – adaptation to current phone sizes (Fig. 2)

Illustrations not available for every product configuration.

Ambix nova backpack

Ambix nova backpack mini

Ambix nova trolley
(backpack not included)

Designation	Article reference	Color	Height (cm)	Width (cm)	Depth (cm)	Weight (kg)	Max. lifting capacity (kg)	Material
Ambix act*iv* backpack, small	2892101 *(PO 2023)*	Light blue	38	28	8	1.0	8	Polyamide
Ambix nova backpack	2892210	Black	48	34	16	1.4	11	Polyester
Ambix nova backpack, mini	2892220	Light blue	40	33.5	10	1.0	8	Polyester
Ambix nova trolley	2892230	Silver/ black	54 (fully enlarged 99)	31	19.5	1.0	40	Plastic/metal

(PO 2023 – phased out 2023)

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

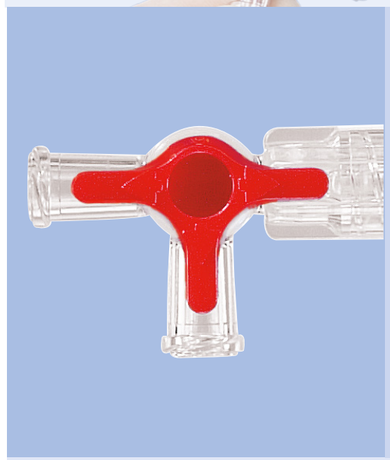
FRESENIUS KABI
caring for life

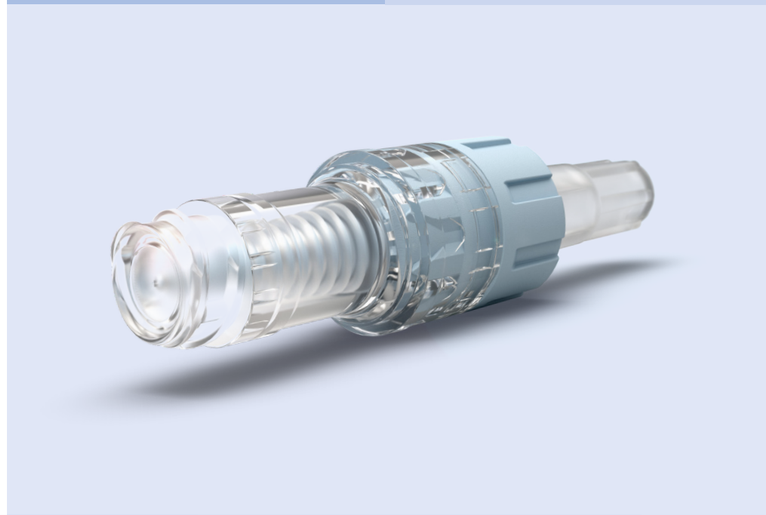
Accessories

There are many potential sources of error within the scope of 'routine' inpatient and outpatient infusions.

Health care professionals are required to coordinate the entire application management system. These potential sources of error are further complicated by the heightened complexity associated with the underlying diseases of your patients and the variety of various active substances available.

You are often required to keep track of the simultaneous delivery of several medications, infusion solutions or nutritional components, especially in the case of intensive-care patients. The Fresenius Kabi MedTech Division provides you with **a broad portfolio of carefully designed, compatible products** in order to make it easier to manage intensive-care infusions and **provide the highest level of patient and user safety.** From an intensive-care standpoint, the product requirements provide comprehensive benefits for inpatient and outpatient infusion management. The application designs, which are **simple and safe to use,** enable safe and reliable infusion management.





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Back Check Valves (BCV)

PVC FREE | LATEX FREE | DEHP FREE*

Back Check Valves for parallel infusions

- One-way infusion valve
- Automatic valve function:
  - Prevents retrograde delivery of infusion solutions during gravity infusion
  - Prevents blood from flowing back into the infusion set when infusion is stopped
- As a connector on indwelling venous cannulas or central venous catheters:
  - Prevents blood from flowing back out of the venous access port
  - Needle-free access for additional infusions or medication applications
- Markings indicate the flow direction in order to prevent inadvertent misconnections (Fig. 1)
- Volumetric flow rate with glucose: ≥ 90 mL/min

Back Check Valve

Back Check Valve with protective cap

Designation	Article reference	Materials fluid path	Opening pressure (bar)
Back Check Valve	8502802, 8502802AP	Silicone, SAN	0.02
Back Check Valve with protection cap	8502852	Silicone, SAN	0.02

SAN - Styrene acrylonitrile resin, Product Code: AP - Asia Pacific

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

FRESENIUS KABI
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Stoppers & Caps

PVC FREE | LATEX FREE | DEHP FREE*

Combination Cap LL

Universally compatible dual-function sealing taper without injection feature

- Luer Lock, male/female

Injection Cap

Safety seal with injection feature

- With flexible latex-free membrane for the intermittent injection of medications
- Protects against contact contamination during injection
- Luer Lock, male

Closing Cap LL

Safety seal without injection feature

- Luer Lock, male

Closing Cap Luer, yellow

Sealing stopper without injection feature

- Luer-Slip, male/female

freeflex® caps

freeflex protective caps for identification and protection following administration of medication

Designation	Article reference	Color code	Max. pressure (bar)[5]	Material
Combination Cap LL, red	8501512	red	2	PP
Combination Cap LL, orange	8501522	orange	2	PP
Combination Cap LL, blue	8501532	blue	2	PP
Combination Cap LL, yellow	8501542	yellow	2	PP
Combination Cap LL, white	8501552	white	2	PP
Injection Cap, yellow	8501502	yellow	2	ABS, PI
Closing Cap LL, yellow	8502812	yellow	2	PS
Closing Cap Luer, yellow	8502822	yellow	0.5	ABS
freeflex® cap	2870071	red	-	PP
Protective cap, sterile	8501741	red	-	PP

PP - Polypropylene, PS - Polystyrene, ABS - Acrylonitrile butadiene styrene, PI - Polyisoprene

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

FRESENIUS KABI
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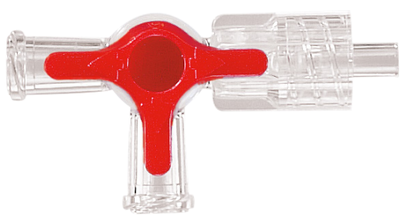
3-Way Stopcocks

LATEX FREE

Variable 3-Way Stopcock systems for use in simultaneous infusion therapy

- Compact design ensures lowest residual volumes in the system
- Clear flow direction display (Fig. 1)
- Rotary for 360°
- Pressure-resistant up to 2 bar[5]
- Suitable for lipids



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FRESENIUS KABI
caring for life

LATEX FREE

3-Way Stopcocks

Designation	Article reference	Color code	Materials
3-way Stopcock	8501712 *(PO 2023)*, 8501712AP *(PO tbd)*, 8501712CB *(PI)*	blue	PC
3-way Stopcock	8501722, 8501722AP *(PO tbd)*, 8501722CB *(PI)*	blue	PSU
3-way Stopcock	8501742	red	PSU
3-way Stopcock	8501762	white	PSU

			Tube			Materials fluid path		
Designation	Article reference	Color code	Diameter (mm)	Length (cm)	Kink-resistant	Stopcock	Tube	Connectors
3-way Stopcock with line	8501772 *(PO tbd)*	white	1.5 x 2.7	~10	-	PC	PVC (DEHP)	MABS, PVC
3-way Stopcock with line	8501774	white	1.5 x 2.7	~10	-	PSU	PVC (DEHP)	MABS, PVC
3-way Stopcock with line	8501782	blue	1.5 x 2.7	~10	-	PC	PVC (DEHP)	MABS, PVC
3-way Stopcock with line	8501784	blue	1.5 x 2.7	~10	-	PSU	PVC (DEHP)	MABS, PVC
3-way Stopcock with line	8501792, 8501792AP, 8501792CB - *(PO tbd)*	blue	2.0 x 4.2	~10	•	PC	PVC (DEHP)	ABS, PVC
3-way Stopcock with line	8501794	blue	2.0 x 4.2	~10	•	PSU	PVC (DEHP)	ABS, PVC

(PO - phased out, PI - phase in), PC - Polycarbonate, PSU - Polysulfone, PVC - Polyvinyl chloride, MABS - Methylmethacrylate Acrylonitrile Butadiene Styrene, ABS - Acrylonitrile butadiene styrene, Product Codes: AP - Asia Pacific, CB/CN - China, SA - South America (Brazil)

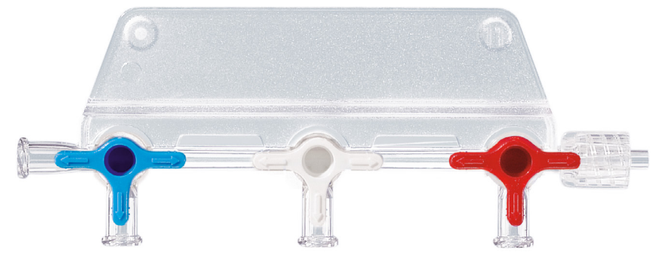
FRESENIUS KABI
caring for life

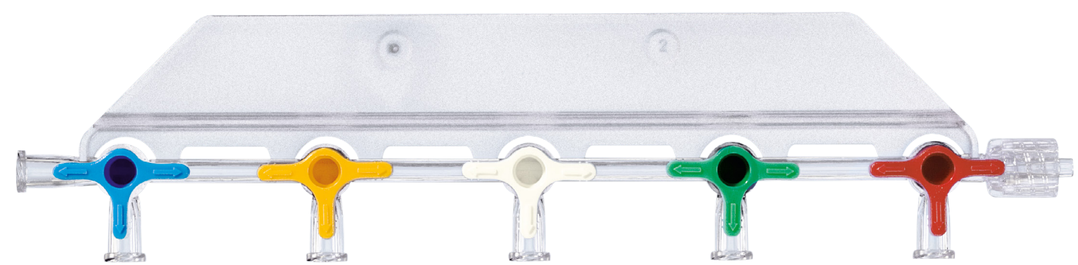
Manifold sets and manifold holder

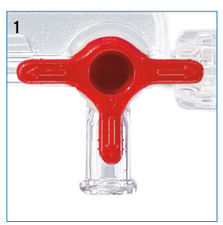
LATEX FREE

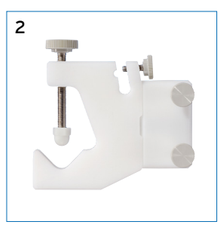
Variable manifold stopcock systems for use in infusion therapy

- Compact design ensures lowest residual volumes in the system
- Clear flow direction display (Fig. 1)
- Color-coded turn handles (blue-white-red, blue-yellow-white-green-red) reduce the risk of confusion among multiple infusions when using manifold systems
- Rotary for 360°
- Manifold holder for secure attachment to IV pole (Fig. 2)
- Pressure resistant up to 2 bar[5]
- Suitable for lipids









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LATEX FREE

Manifold sets and manifold holder

Designation	Article reference	Color code	Materials
Manifold system, 3-port	8501802, 8501802AP *(PO tbd)*, 8501802CB *(PI)*	Blue, white, red	PSU
Manifold system, 5-port	8501842, 8501842AP *(PO tbd)*	Blue, yellow, white, green, red	PSU

(PO – phased out, PI – phase in), PSU – Polysulfone Product Codes: AP – Asia Pacific

			Tube		Materials fluid path		
Designation	Article reference	Color code	Diameter (mm)	Length (cm)	Manifold	Tube	Connectors
Manifold system, 3-port and line	8501832 *(PO tbd)*	Blue, white, red	3.0 x 4.1	~200	PSU	PVC (DEHP)	MABS, PVC
Manifold system, 3-port and line	8501892	Blue, white, red	3.0 x 4.1	~140	PSU	PVC (DEHP)	MABS, PVC
Manifold system, 5-port and line	8501872	Blue, yellow, white, green, red	3.0 x 4.1	~200	PSU	PVC (DEHP)	MABS, PVC
Manifold system, 5-port and line	8501882 *(PO tbd)*	Blue, yellow, white, green, red	3.0 x 4.1	~140	PSU	PVC (DEHP)	MABS, PVC

(PI – phase in), PSU – Polysulfone, PVC – Polyvinyl chloride, MABS – Methylmethacrylate Acrylonitrile Butadiene Styrene Product Codes: AP – Asia Pacific, CB – China

Designation	Article reference
Stopcock Holder Fixture for Manifold Stopcock System	8501852

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Accessories

Infusion bottle holder

- Fresenius stainless steel bottle holder, suitable for glass infusion bottles
- For use on IV poles or attachment to common bed mounts, for example

Designation	Material	Article reference
Fresenius bottle holder	Stainless steel	3990004

Extra accessories

Designation	Article reference
Braun-Melsungen Bottle holder	3990034
Dosi-Flow 30	2946001
EVA Mixing device for TPN	1021319F, 1021320F
EVA Mixing device set for TPN	1021321F, 1021322F
Filling Set, 4 Pack	1021336F
Irrigation stand (electric)	2846501
Light protected bag, small (173 x 300mm)	3983701
Light protected bag, medium (193 x 395mm)	3983711
Light protected bag, large (348 x 470mm)	3983721
Light protected bag (458 x 590mm)	3983731

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Needle-free connectors

In 1992, the US Food and Drug Administration required healthcare services to adopt Needle-free Connectors to prevent healthcare workers' exposure to bloodborne pathogens resulting from needle-stick injuries, and several systems of disinfectable needle-free connectors were introduced.[6,7]

Needle-free Connectors are essential devices which are used for infusion therapy. They are connected to the end of vascular access devices and enable catheter access for infusion and aspiration. They decrease the risk of bloodstream infections and occlusions on the patient side and needle-stick injuries on the healthcare professional side.[6]

There are various designs on the market. The Needle-free Connector is the microbial gatekeeper for vascular catheters.[6]

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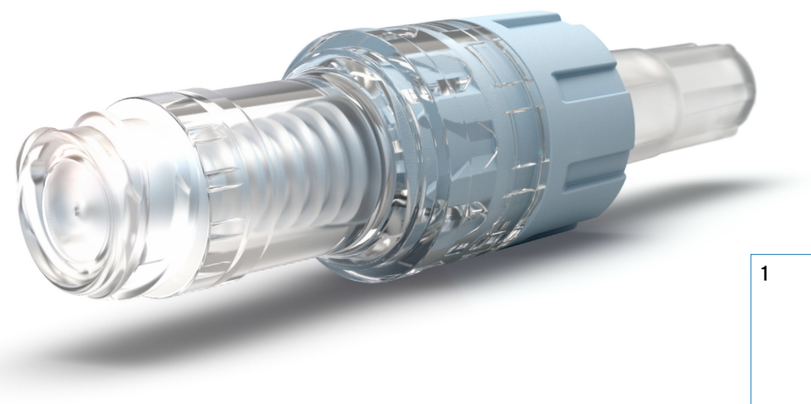
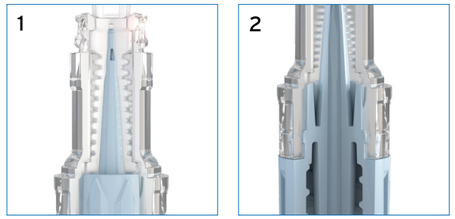
K-Zero®

LATEX FREE | DEHP FREE* | NEW

Neutral displacement connector

- Designed to minimize entry points for bacteria between the connector's external surface and internal fluid path upon activation
- Closed system – reduces or eliminates space for contamination to occur and biofilm to develop (Fig. 1)
- Straight fluid path – facilitates adequate flushing (Fig. 2)
- Minimal residual volume, allows for lower flush volumes
- Versatile – can be used on peripheral, venous or central venous catheters for the administration of blood or IV fluids
- No clamping technique required – eliminating the need for using different protocols





Illustrations not available for every product configuration.

Designation	Article reference	Fluid displacement	Flow rate (mL/h)	Priming Volume (mL)	Max. infusion pressure (bar)	Number of activations
K-Zero Needleless connector	M79400849 (NAM) *(PI)*, M79400849Y *(PI)*	Neutral	125	0.07	22.4	300

	Article reference	Tube diameter (mm)	Tube length (cm)	Materials fluid path	
				Tube	Connectors
K-Zero Extension	M78401045Y *(PI)*	1.5 x 2.7	10	PVC	PVC, MABS

(PI – phase in), NAM – North America. PVC – Polyvinyl chloride, MABS – Methylmethacrylate Acrylonitrile Butadiene Styrene

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

FRESENIUS KABI
caring for life

K-NECT infusion connection system

LATEX FREE
DEHP FREE*

Closed, needle-free IV access systems for safe infusion

- Protect users against needlestick injuries
- With unique Tru-Swab™ technology:
  - Smooth, even surfaces for quick and easy cleaning[8] (Fig. 1)
  - Increased protection against bacterial contamination[9]
  - Meets the highest hygiene requirements[1]
- Double-coatings prevent air penetration during use

1


Illustrations not available for every product configuration.

Designation	Article reference	Fluid displacement	Flow rate (mL/h)	Priming Volume (mL)	Max. infusion pressure (bar)	Number of activations
K-NECT	M79400845 *(PO 2024)*	Negative	146	0.28	3	200

	Article reference	Tube diameter (mm)	Tube length (cm)	Materials fluid path	
				Tube	Connectors
K-NECT Extension	M78401045 *(PO 2023)*	1.5 x 2.7	100	PVC	PVC, MABS

(PO - Phased out), PVC - Polyvinyl chloride, MABS - Methylmethacrylate Acrylonitrile Butadiene Styrene.

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

FRESENIUS KABI
caring for life

K-NECT MaxPlus® infusion connection system

LATEX FREE
DEHP FREE*

Closed, needle-free IV access systems with positive pressure for long-term indwelling systems and safe infusion

- Reduce the need to perform adjustments on the infusion systems and are hygienically safe to handle
- Provide a high level of safety with the use of central venous catheters[10]
- Protect users against needlestick injuries
- Positive pressure[11] prevents blood from flowing back into the catheter and reduces the risk of thrombotic catheter occlusions[10]
- With unique Tru-Swab™ technology (Fig. 1):
  - Smooth, even surfaces for quick and easy cleaning[8]
  - Increased protection against bacterial contamination[9]
  - Meets the highest hygiene requirements[1]
- Double-coatings prevent air penetration during use
- MaxPlus® is a registered trademark of CareFusion Corporation or one of its subsidiaries

1


Designation	Article reference	Fluid displacement	Flow rate (mL/h)	Priming Volume (mL)	Max. infusion pressure (bar)	Number of activations
K-NECT MaxPlus®	M79400846 *(PO 2024)*	Positive	151	0.28	3	200
K-NECT MaxPlus® opaque	M79400848 *(PO 2024)*	Positive	151	0.28	3	200

(PO - Phased out)

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

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Comparison of needle-free IV access

DEHP FREE*

	K-Zero®	K-NECT	K-NECT MaxPlus®
Fluid path/fluid flow	**Straight/laminar**	**Complex/turbulent**	**Complex/turbulent**
Fluid displacement	Neutral	Negative	Positive
Flow rate (mL/min)	125	146	151
Priming volume (mL)	0.07	0.28	0.28
Max. infusion pressure	250 PSI (17 bar)	45 PSI (3 bar)	45 PSI (3 bar)
Number of activations	300	200	200

K-Zero® offers significant improvements in priming volume, maximum infusion pressure and number of activations compared to the previous K-NECT connector.

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

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Handling

K-Zero infusion connection system

1. Prior to initial use

Remove K-Zero from the package without contaminating it

2. Prime K-Zero

Prime K-Zero in accordance with facility protocol to avoid air in the line

3. Remove protective cap and attach Luer

Remove the protective cap and attach the male luer of K-Zero to either an extension set or a catheter

4. Connect a Luer Lock

Connect a luer lock, luer slip syringe or primed infusion set to K-Zero for administration

5. Flush K-Zero

Flush K-Zero with normal saline or in accordance with facility protocol after each use

5. Disinfection

Use aseptic technique and sterile gloves

Remove a new swab from packaging (e.g. isopropyl alcohol swab)

Swab top of K-Zero® back and forth according to protocol typically used by Healthcare Professionals

Ensure drying time is kept according to instruction of disinfectant used

Connect according to hospital policy

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Handling

K-NECT

1. Prior to initial use

Fill and connect the system while avoiding the formation of bubbles

2. Prior to each use

Perform wipe-disinfection and rinse in accordance with your in-house specifications

3. After each use

Rinse the system in accordance with your in-house specifications

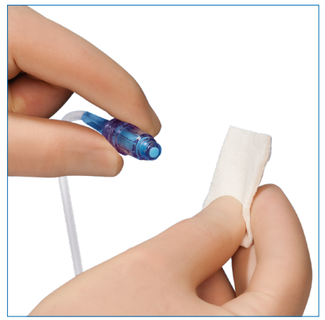
4. Disconnection

Upon completion of the rinsing procedure disconnect syringe (by applying gentle pressure to the plunger)

K-NECT MaxPlus®

1. Prior to initial use

Fill and connect the system while avoiding the formation of bubbles



2. Prior to each use

Perform wipe-disinfection and rinse in accordance with your in-house specifications

3. After each use

Rinse the system in accordance with your in-house specifications

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Infusion filtration*

Patients receiving parenteral nutrition (PN) are subject to a risk of contamination.

For example, infusion solution containers can become contaminated with particles during production, transport or storage. Filters **provide mechanical retention** of contaminants, including larger-scale particles, bacteria, fungi, microorganisms, endotoxins, lipid particles and air – depending on filter type.[1]

The Fresenius Kabi range of infusion filters provides you with solution options that enable you to ensure that your infusion management system is safe and hygienic.

The infusion filters manufactured by Fresenius Kabi **meet the widest range of infusion management requirements** and will assist you in the effective prevention of hygiene-related complications (e.g. due to contamination with particles).

The selection of the appropriate filter is very significant. Following criteria should be considered:[12–14]

Pore size: two sizes are available 0.2 µm and 1.2 µm. Filters with a pore size of 0.2 µm are most effective at retaining certain microorganisms (e.g. bacteria). However, certain drugs require a pore size of 1.2 µm (e.g. lipid solutions).

Charge of Membrane: Electrostatic attraction between charged membranes and particles enhance filtration properties (e.g. membranes positively charged are used for removal of endotoxins).

Duration of use: this period indicates how long filtration can be ensured.

*For the following chapter, more information regarding the specific filter type upon request available.

FRESENIUS KABI
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Infufil Air, 96 h

LATEX FREE
DEHP FREE*

Hydrophilic, ventilated, flat infusion filters[1]

- Reliably retains bacteria, fungi, microorganisms and particles
- Reliable removal of air via the integrated air-vent system
- Back Check Valve integrated into the male taper (Fig. 1)
- Article reference 2909502: Positively charged Supor® membrane for the effective retention of particles and endotoxins as well as bacteria (B. diminuta)

1


Designation	Article reference	Fluid membrane				Air-vent membrane		Filling volume filter (ml)	Max. pressure (bar)	Tube		Materials fluid path		
		Charge	Pore size (µm)	Surface area (cm^2)	Material	Pore size (µm)	Material			Diameter (mm)	Length (cm)	Tube	Connector	Back Check Valve
Infufil Air, 96 h	2909502, 2909502AP	+	0.2	10	PES	0.02	PTFE	2.4	3.1	3.0 x 4.1	-	PVC	PVC	ABS, SAN, Silicone
Infufil Air, 96 h	2909602	None	0.2	10	PES	0.03	PTFE	2.4	3.1	3.0 x 4.1	7/5	PVC	PVC	ABS, SAN, Silicone

PES - Polyethersulfone, PTFE - Polytetrafluoroethylene, PVC - Polyvinyl chloride, ABS - Acrylonitrile butadiene styrene, SAN - Styrene acrylonitrile resin, Product Code: AP - Asia Pacific

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

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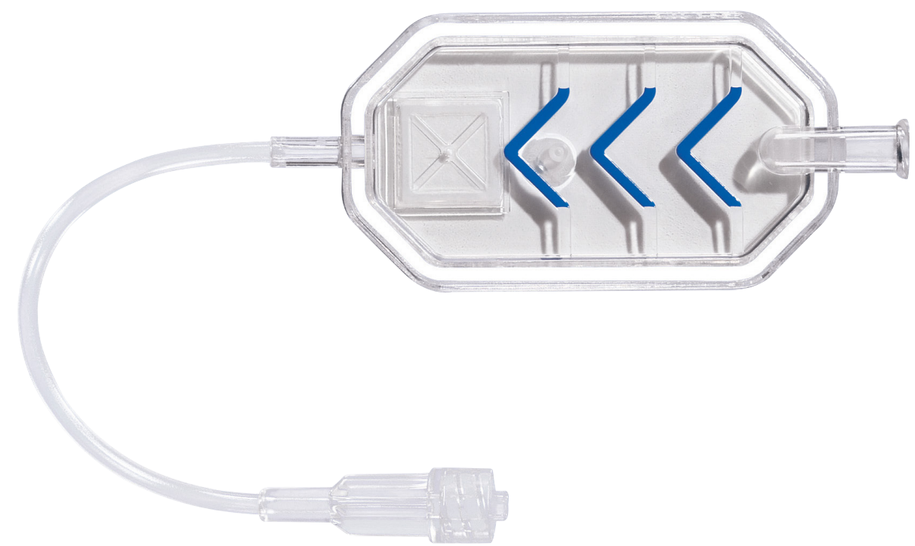
Infufil Air II, 120 h

LATEX FREE

Hydrophilic, ventilated, flat infusion filters for long-term infusion[1]

- Reliably retains bacteria, fungi, microorganisms, particles, and endotoxins for up to 120 hours
- Enables longer intervals between the switching of infusion systems with no impact on the quality of therapy or care (up to 120 h)
- Reliable removal of air via the integrated air-vent system
- PVC-free: Adequate for administration of sensitive drugs



		Fluid membrane				Air-vent membrane				Tube		Materials fluid path		
Designation	**Article reference**	**Charge**	**Pore size (µm)**	**Surface area (cm²)**	**Material**	**Pore size (µm)**	**Material**	**Filling volume filter (ml)**	**Max. pressure (bar)**	**Diameter (mm)**	**Length (cm)**	**Tube**	**Connector**	**Case**
IInfufil Air II, 120h	2909201 *(PO 2023)*	+	0.2	13.5	Nylon PA	0.03	PTFE	1.8	4	2.5 x 4.1	10	PVC (DEHP)	ABS, MABS	MABS
Infufil Air II, 120h, PVC free	2909401	+	0.2	13.5	Nylon PA	0.03	PTFE	1.8	4	1.5 x 2.7	10	PUR	ABS	MABS

(PO - phase out), PA - Polyamide, PTFE - Polytetrafluoroethylene, PVC - Polyvinyl chloride, ABS - Acrylonitrile butadiene styrene, MABS - Methylmethacrylate Acrylonitrile Butadiene Styrene, PUR - Polyurethane

FRESENIUS KABI
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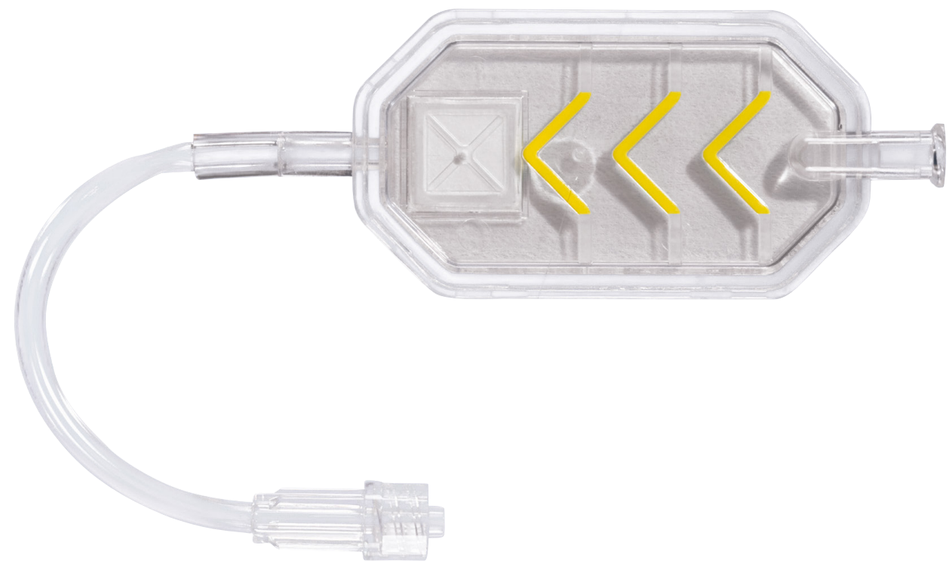
PVC FREE
LATEX FREE
DEHP FREE*

Lipifil Air, 24 h

Ventilated, flat infusion filters for lipid applications and mixed solutions[1]

- Provides 24 hours of protection against microorganisms, spores, fungi, and particles larger than 1.2 µm
- Reliable removal of air via the integrated air-vent system



		Fluid membrane				Air-vent membrane				Tube		Materials fluid path		
Designation	**Article reference**	**Charge**	**Pore size (µm)**	**Surface area (cm²)**	**Material**	**Pore size (µm)**	**Material**	**Filling volume filter (ml)**	**Max. pressure (bar)**	**Diameter (mm)**	**Length (cm)**	**Tube**	**Connector**	**Case**
Lipifil Air 24h, PVC-free	2909301	None	1.2	13.5	PET	0.03	PTFE	1.8	4	3.0 x 4.1	10	PUR	ABS, MABS	MABS

PET - Polyethylene Terephthalate, PTFE - Polytetrafluoroethylene, PUR - Polyurethane, ABS - Acrylonitrile butadiene styrene, MABS - Methylmethacrylate Acrylonitrile Butadiene Styrene,

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

FRESENIUS KABI
caring for life

PVC FREE
LATEX FREE
DEHP FREE*

Infufil Air syringe filter attachment

Hydrophilic filter for attachment to the syringe for the sterile filtration of small volumes of liquid

- Luer Lock, male/female

Infufil Air, red[1]

- Reliably retains bacteria, fungi, microorganisms and particles

Infufil Air, transparent[1]

- Reliably retains particles

Designation	Article reference	Fluid membrane				Materials fluid path
		Charge	Pore size (µm)	Surface area (cm^2)	Materials	
Infufil Air Syringe filter, red	2909702	None	0.2	5.7	Cellulose acetate	PC
Infufil Air Syringe filter, transparent	2909802 *(PO 2023)*	None	5	4.6	Polyester	ABS

(PO – phase out), PC – Polycarbonate, ABS – Acrylonitrile butadiene styrene

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

FRESENIUS KABI
caring for life

Air-vent filters

LATEX FREE
DEHP FREE*

Hydrophobic air-vent filters[1]

- Reliably retains bacteria, fungi, microorganisms and particles
- Luer Lock, male/female
- Article reference 8500442: smooth piercing, in the case of thick sealing membranes (Fig. 1)

Illustrations not available for every product configuration.

Designation	Article reference	Fluid membrane: Charge	Fluid membrane: Pore size (µm)	Fluid membrane: Surface area (cm^2)	Fluid membrane: Materials	Max. pressure (bar)	Materials fluid path	Cannula
Air-vent filter LL	2909112 *(PO 2023)*	None	0.2	1.5	PTFE	1	PVC	-
Air-vent filter LL with Steel cannula	8500442 *(PO 2023)*	None	0.2	1.5	PTFE	1	PVC	19 G, 30 mm PP, Stainless Steel

(PO - phase out), PTFE - Polytetrafluoroethylene, PVC - Polyvinyl chloride, PP - Polypropylene

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

FRESENIUS KABI
caring for life

Medication preparation

Health care professionals are responsible for the coordination and practical implementation of the entire medicinal therapy. This includes the withdrawal of the medications from supply containers and their injection.

Special withdrawal cannulas and transfer systems assist you in complying with your hygiene guidelines.

In addition, we offer you **special withdrawal cannulas** for the preparation of anti-infection and cytostatic agents, as well as **transfer devices** for the transfer of sterile liquids within the closed system.

Fresenius Kabi strives to achieve the **universal compatibility** of these products on the one hand, while on the other hand providing **especially high-quality systems** that are compatible with Fresenius Kabi containers for medications and nutrition components, such as Kabi**Pac**® and **free***flex*® bags and three-chamber bags.

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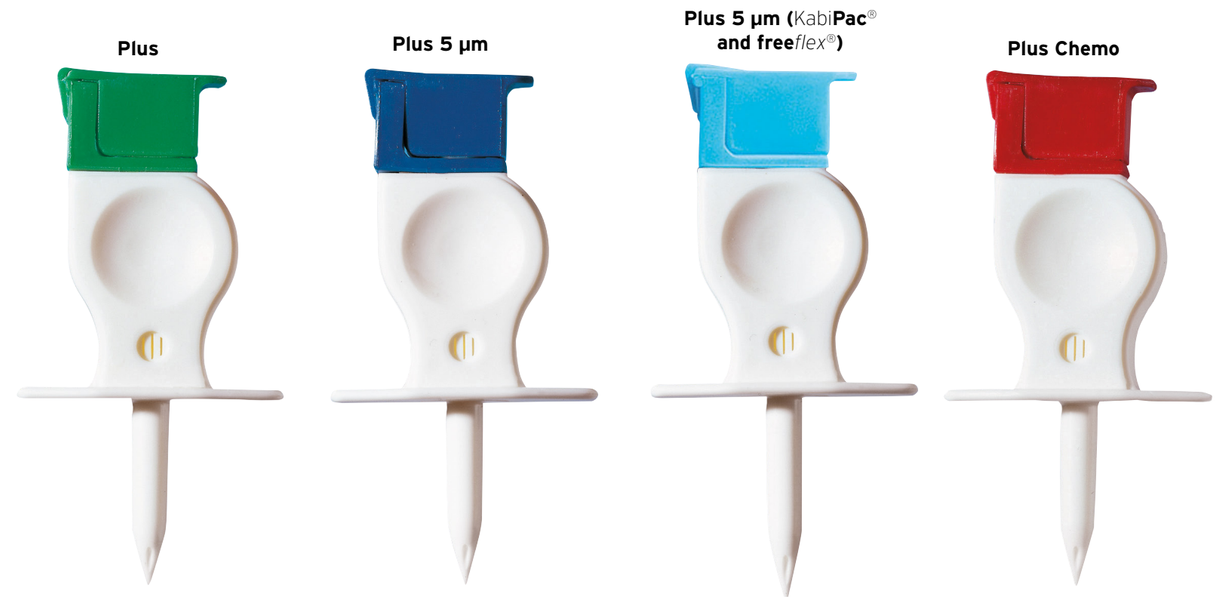
You can find out more information about the infusion containers in the Kabi**Pac**® and **free***flex*® sales brochures

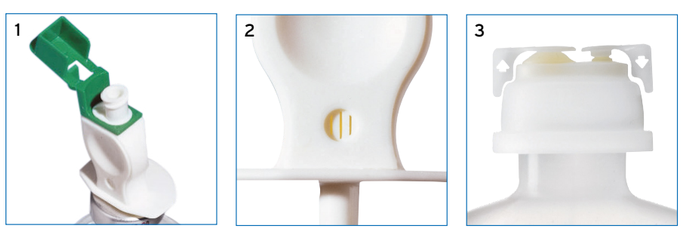
PVC FREE | LATEX FREE | DEHP FREE*

Extra-Spike® Plus

Ergonomic spikes for withdrawal/injection of fluids from/in containers

- Easy to pierce
- Easy to open and close with one hand (Fig. 1)
- Secure protection against microbial contamination with built-in air-vent membrane[1] (Fig. 2)
- Extra-Spike® Plus 5 µm: Highly compatible with the Kabi**Pac**® (Fig. 3) and **free***flex*® infusion containers
- Extra-Spike® Plus Chemo: with a built-in 0.2 µm air-vent filter offers protection against toxic aerosols during the dissolution of dry substances[1]
- Luer Lock (Fig. 1)





Illustrations not available for every product configuration.

Designation	Article reference	Color code	Fluid membrane: Pore size (µm)	Fluid membrane: Material	Air-vent membrane: Pore size [µm]	Air-vent membrane: Material	Materials fluid path
Extra-Spike® Plus	2902802, 2902802AP, 2902802CB *(PI)*	green	-	-	3	PTFE	ABS
Extra-Spike® Plus 5 µm	2902812	blue	5	PA	3	PTFE	ABS
Extra-Spike® Plus 5 µm	2902817	light-blue	5	PA	3	PTFE	ABS
Extra-Spike® Plus Chemo	2902822, 2902822AP 2902822CB *(PI)*	red	5	PA	0.2	PTFE	ABS

(PI - phase in), Product Codes: AP - Asia Pacific, CB/CN - China, PA - Polyamide, PTFE - Polytetrafluoroethylene, ABS - Acrylonitrile butadiene styrene

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

FRESENIUS KABI
caring for life

Extra-Spike®

PVC FREE · LATEX FREE · DEHP FREE*

Ergonomic spikes for withdrawal/ injection of fluids from/in a container

- Integrated air-vent (Air)
- Easy piercing with steel cannula (Fig. 1)
- Chemo versions: Hydrophobic, non-fibrous, 0.2 µm filter reliably retains aerosols[1]
- Luer Lock

Air steel cannula

Chemo Air steel cannula

Illustrations not available for every product configuration.

Designation	Article reference	Air-vent membrane: Pore size (µm)	Air-vent membrane: Material	Outer diameter cannula (mm)	Materials fluid path
Extra-Spike® Air steel cannula	2902842	3	PTFE	1.5	PS, Stainless steel
Extra-Spike® Chemo Air steel cannula	2902872 *(PO 10.2022)*	0.2	-	1.5	PS, Stainless steel

(PO - phase out), PTFE - Polytetrafluoroethylene, PS - Polystyrene

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FRESENIUS KABI
caring for life

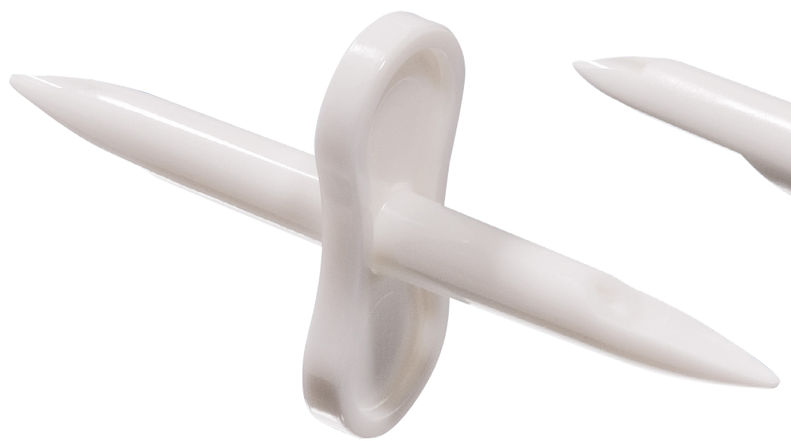
Transfer Devices

PVC FREE
LATEX FREE
DEHP FREE*

Transfer cannula for transferring and/or mixing sterile liquids within a close system

- Easy to pierce
- Handy, ergonomically designed grip plate enables trouble-free handling (Fig. 1)
- Minimal residual volume
- Transfer device, micro: Compatible with the Kabi**Pac**® and **free***flex*® infusion containers

Transfer Device FK micro



Transfer Device

1

Illustrations not available for every product configuration.

Designation	Article reference	Material fluid path
Transfer Device	8500432	PS
Transfer Device FK micro	8500437	PS

PS - Polystyrene

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FRESENIUS KABI
caring for life

With our **free***flex*® portfolio, clinical staff can avoid accidental disconnection and prevent contamination with cytostatics

PVC FREE | LATEX FREE | DEHP FREE*

Adapters for free*flex*®/free*flex*®+ and Kabi**Pac**®

Adapters for the transfer of sterile liquids within a close system

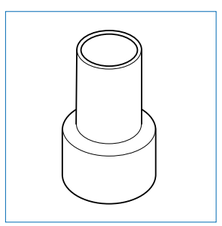
- Kabi**Pac**® Transfer Adapters
  - Specially developed for Kabi**Pac**®, the PE bottle equipped with the proven DuoCap system (infusion and injection port) (Fig. 1)
- **free***flex*® Transfer Adapters
  - Specially developed for **free***flex*®, the sophisticated infusion bag equipped with integrated port technology
- **free***flex*®**+** Transfer Adapters
  - Specially developed for **free***flex*®**+** infusion bags for needle-free preparation of medication
  - Permanent attachment to the vial thanks to locking positions and safety ring
- Internally mounted steel cannula
- Easy to secure to the port with snap-in system
- Minimal residual volume

Kabi**Pac**® **Transfer Adapter**

free*flex*®**+ Transfer Adapter**

free*flex*® **Transfer Adapter**

1



Transfer cap

Designation	Article reference	Outer diameter cannula (mm)	Material fluid path
free*flex*® transfer adapter (steel/plastic cannula)	2870081	1.5	ABS, Stainless Steel
Kabi**Pac**® transfer adapter (steel/plastic cannula)	2870092	1.5	SBC, Stainless steel
free*flex*®**+** transfer adapter (Luer Lock)	2870103	-	PC
Transfer cap	B285141	1.0	PS, Stainless Steel

ABS - Acrylonitrile butadiene styrene, SBC - Styrene-butadiene, PC - Polycarbonate, PS - Polystyrene

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FRESENIUS KABI
caring for life

Freka® Lipoflow

PVC FREE | LATEX FREE | DEHP FREE*

Transfer set for the transfer of liquid from an infusion bottle to an infusion bag

- Integrated, sealable air-vent system with hydrophobic and oleophobic bacteria filter[1]
- Luer Lock fitting with steel cannula

		Tube			Material fluid path		
Designation	**Article reference**	**Diameter (mm)**	**Length (cm)**	**Needle size (G)**	**Spike**	**Tube**	**Needle**
Freka® Lipoflow	2867001	3.0 x 4.1	75	16	ABS	PUR	PP, Stainless steel

ABS - Acrylonitrile butadiene styrene, PUR - Polyurethane, PP - Polypropylene

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FRESENIUS KABI
caring for life

Freka® Mix system

LATEX FREE
DEHP FREE*

Single-chamber mixing bags for mixing of infusion solutions

Features

Handle inlay

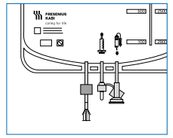
- For transport and hanging
- High stability[15]

Injection port

- Ergonomic adding of drugs[15]
- Compatible with standard strings and needles[15]
- Additional closure cap

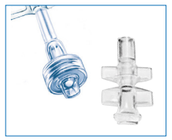
Bag foil

- EVA monolayer bags
- EVA/EVOH multilayer bags for low permeability of gases
- Transparent
- Marking injection and infusion port



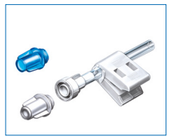
Infusion port

- Hard plastics for spike insertion[15]
- Compatible with standard infusion lines
- Infusion Port 'Closure'
- Infusion Port 'Twist Off'



Filling port

- Male large screw or female Luer Lock connector to reduce filling times[16]
- Non-reopening clamp to seal the port after filling
- Additional protective cap for hermetic sealing



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FRESENIUS KABI
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Freka® Mix system

LATEX FREE
DEHP FREE*

Special Features

(EVA monolayer, EVA/EVOH multilayer bags) with pre-connected filling leads.

Filling Leads

- Central line equipped with a clamp for complete blocking
- Peripheral lines equipped with clamps for individual blocking

Vented spikes

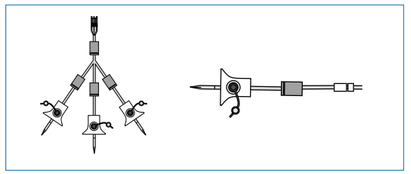
- Air vent with bacterial filter (e.g. air borne) for fast and safe filling

25 µm particle filter

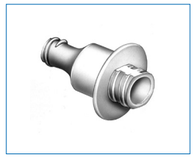
- Prevention of possible particles
- Available in Freka® Mix Bag with 6-filling leads configuration

Accessories

Filling leads with Female Large Screw adapter to connect with single EVA bags and multilayer bags for gravity filling procedures



Adapter to connect single bags with filling systems



Female Large Screw to Female Luer Lock

Female Large Screw to Female Large Screw

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Freka® Mix system

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Designation	Article reference	Filling volume (mL)	Filling port	Materials fluid path: Tube	Filling port	Filling lead	Injection port	Infusion port
Freka® Mix Bag (EVA monolayer bags)								
Freka® Mix Bag 150 ml	F2859041	150	Male Large Screw	EVA/PUR	ABS	-	ABS, PIP, PP	PC, CIIR
Freka® Mix Bag 250 ml	F2859051	250	Male Large Screw	EVA/PUR	ABS	-	ABS, PIP, PP	PC, CIIR
Freka® Mix Bag 500 ml	F2859061	500	Male Large Screw	EVA/PUR	ABS	-	ABS, PIP, PP	PC, CIIR
Freka® Mix Bag 1000 ml	F2859011	1,000	Male Large Screw	EVA/PUR	ABS	-	ABS, PIP, PP	PC, CIIR
Freka® Mix Bag 2000 ml	F2859021	2,000	Male Large Screw	EVA/PUR	ABS	-	ABS, PIP, PP	PC, CIIR
Freka® Mix Bag 3000 ml	F2859031	3,000	Male Large Screw	EVA/PUR	ABS	-	ABS, PIP, PP	PC, CIIR
Freka® Mix Bag 250 ml (Twist off)	F2860051	250	Female Luer Lock	EVA/PUR	PC	-	ABS, PIP, PP	PVC
Freka® Mix Bag 500 ml (Twist off)	F2860061	500	Female Luer Lock	EVA/PUR	PC	-	ABS, PIP, PP	PVC
Freka® Mix Bag (EVA monolayer bags) with pre-connected filling leads								
Freka® Mix Bag 1000 ml + 3-filling leads	F2859001	1,000	3-filling leads	EVA/PUR	ABS	ABS, PVC	ABS, PIP, PP	PC, CIIR
Freka® Mix Bag 2000 ml + 3-filling leads	F2859321	2,000	3-filling leads	EVA/PUR	ABS	ABS, PVC	ABS, PIP, PP	PC, CIIR
Freka® Mix Bag 3000 ml + 3-filling leads	F2859311	3,000	3-filling leads	EVA/PUR	ABS	ABS, PVC	ABS, PIP, PP	PC, CIIR
Freka® Mix Bag 2000 ml + 6-filling leads (Twist off)	F2860291	2,000	6-filling leads + 25 µm filter	EVA/PUR	ABS	ABS, PVC, PA, PE	ABS, PIP, PP	PVC
Freka® Mix Bag 3000 ml + 6-filling leads	F2860231	3,000	6-filling leads + 25 µm filter	EVA/PUR	ABS	ABS, PVC, PA, PE	ABS, PIP, PP	PVC, CIIR
Freka® Mix Bag (EVA/EVOH multilayer bags) with pre-connected filling leads								
Freka® Mix Bag 3000 ml + 6-filling leads, multilayer	F2860241	3,000	6-filling leads + 25 µm filter	EVA/PUR	ABS	ABS, PVC, PA, PE	ABS, PIP, PP	PVC, CIIR
Freka® Mix Bag 4000 ml + 6-filling leads, multilayer	F2860261	4,000	6-filling leads + 25 µm filter	EVA/PUR	ABS	ABS, PVC, PA, PE	ABS, PIP, PP	PVC, CIIR

EVA - Ethylene-vinyl acetate, PUR - Polyurethane, ABS - Acrylonitrile butadiene styrene, PA - Polyamide, PIP - Polyisoprene, PC - Polycarbonate, CIIR - Chlorobutyl Rubber, PVC - Polyvinyl chloride, PE - Polyethylene, PP - Polypropylene

Designation	Article reference	Materials fluid path
Accessories		
Adapter Female Large Screw to Female Luer Lock	2859211	SAN, ABS
Gravity 3-filling leads	F2859271	ABS, PP, PVC, PE
Gravity 1-filling leads + 25 µm filter	F2860501	ABS, PP, PE, PA, PVC
Tubing set for MultiComp II System	2876761	ABS, PVC, PC, PP, PUR

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FRESENIUS KABI
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Central venous access

For over 30 years Fresenius Kabi has been providing you with complete, long-term, central venous access systems. These include diverse, material-specific portcatheter systems and compatible port cannula systems. These port systems are suitable for both inpatient and outpatient use.

The Ambix port catheter systems by Fresenius Kabi are **completely implantable long-term catheter systems.** They comprise an infusion chamber with a self-sealing silicone membrane and a **unique catheter that connects to the port housing.** Regardless of whether they are made of silicone or polyurethane, all of these catheters have a smooth surface with markings and are radiopaque.

The interior of the port is accessed by piercing the silicone membrane with specially developed, non-coring port cannulas. This enables the safe and reliable, **long-term performance of the port catheter systems in order to optimize patient care.**

The latest generation, Intraport® CP POWERFLOW and the Intraport® T POWERFLOW are specially designed to allow the administration of contrast media and other fluids with up to 21 bar and with a highflow of up to 5 ml/sec.

Fresenius Kabi provides continuously advanced **safety for users and patients** with its ports and port needles

SAFETY = application systems with safety technology

FRESENIUS KABI
caring for life

Central venous access - Ambix Intraport®/Ambix INTROCATH® Plus

PVC FREE | LATEX FREE | DEHP FREE*

Ambix Intraport CP

- *Lightweight*
- Hemocompatible[17]
- Good tissue compatibility[18,19]
- Low incidence of allergic reaction[19]
- High scratch resistant drug chamber[20,21]
- Corrosion resistant[21]
- Bayonette connector for tactile, fast and safe port catheter fixation
- CP Powerflow: highflow injection possible of up to 5 ml/s (max. 21 bar/300 psi)**
- CP Powerflow: CT Mark inside
- MRT Safe up to 3 Tesla

Case	Drug chamber	Septum	Cannula	Bayonet catch	Catheter
PEEK	Aluminium Oxide	Silicone	Stainless steel	PEEK	Silicone or PUR

Ambix Intraport C

- Hemocompatible[17]
- Good tissue compatibility[19]
- Low incidence of allergic reaction[19]
- High scratch resistant[20,21]
- Corrosion resistant[21]
- Bioinert material[19,21,23]
- Bayonette connector for tactile, fast and safe port catheter fixation
- MRT Safe up to 3 Tesla

Case and drug chamber	Septum	Cannula	Bayonet catch	Catheter
Aluminium Oxide, PEEK	Silicone	Stainless steel	PEEK	Silicone or PUR

Ambix Intraport T

- Good tissue compatibility[23]
- Low incidence of allergic reaction[19]
- Scratch resistant[24]
- Corrosion resistant[24]
- Screw coupling
- Ambix Intraport® T HF (High Flow) include introducer set and tunneling instrument
- T Powerflow: highflow injection possible of up to 5 ml/s (max. 21 bar/300 psi)**
- MRT Safe up to 3 Tesla

Case and drug chamber	Septum	Cannula	Screw	Catheter
Titanium	Silicone	Titanium	Titanium + Silicone cover	Silicone or PUR

PEEK - Polyether ether ketone, PUR - Polyurethane, PE - Polyethylene

**Measurements performed with an X-ray contrast medium of 12.6 mPa.s (37 °C) viscosity. Flow of 5 ml/s is achieved when a 19 G Port cannula is used. For other flow rates please read the respective IFU

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

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Additional information can be found in the port system catalogue.

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Central venous access - Ambix Intraport®/Ambix INTROCATH® Plus

Designation	Powerflow				
	Article reference	Length (cm)	Ø inner (mm)	Ø outer (mm)	Ø outer (Fr)
Ambix Intraport® CP Powerflow					
Polyurethane catheter	8086012	~50	1.3	2.4	7.2
Ambix Intraport® T Powerflow					
Polyurethane catheter	8086442	~50	1.3	2.4	7.2
Ambix Intraport® T HF complete with seldinger introducer set and tunneler instrument					
Silicone catheter	8086551	~50	1.4	2.7	8.0
Silicone catheter	8086561	~50	1.6	3.2	9.6

Designation	Ceramic				
	Article reference	Length (cm)	Ø inner (mm)	Ø outer (mm)	Ø outer (Fr)
Ambix Intraport® C					
Silicone catheter	8086211	~50	1.0	2.2	6.6
Polyurethane catheter	8086221	~50	1.3	2.4	7.2

Designation	Composite				
	Article reference	Length (cm)	Ø inner (mm)	Ø outer (mm)	Ø outer (Fr)
Ambix Intraport® CP					
Silicone catheter	8086001	~50	1.0	2.2	6.6
Polyurethane catheter	8086071	~50	1.0	1.7	5.1
Polyurethane catheter	8086061	~50	1.3	2.4	7.2

Designation	Titanium				
	Article reference	Length (cm)	Ø inner (mm)	Ø outer (mm)	Ø outer (Fr)
Ambix Intraport® T					
Standard versions:					
Silicone catheter	8086461	~50	1.0	2.2	6.6
Polyurethane catheter	8086431	~50	1.3	2.4	7.2
Pediatric versions:					
Silicone catheter	8086421	~50	0.8	1.5	4.5

Accessories	
Article reference	
Set contents: Tearaway (Split-Sheath) cannula with dilator; Guidewire outer diameter 0.89 mm, length 50 cm; Introducer Needle 18G x 70 mm; 10 ml syringe with Luer-Slip; Tunneler (8405925, 8405925CB)	
8405921	INTROCATH® Plus 7Fr: suitable for catheters up to outer diameter of 2.2 mm
8405941	INTROCATH® Plus 8Fr: suitable for catheters up to outer diameter of 2.6 mm
8405925, 8405925CB	INTROCATH® Plus 8Fr, Tunneler: suitable for catheters up to outer diameter of 2.6 mm

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FRESENIUS KABI
caring for life

Safety technology for application systems

Needlestick injuries are a daily risk for health care workers.[25, 26]

The majority of sharps injuries are suffered by nurses, but other health care workers and ancillary staff such as cleaners, are also at risk. In addition, medical devices incorporating needles are frequently used for self-treatment outside of the conventional healthcare setting and this can create additional dangers for the general public.

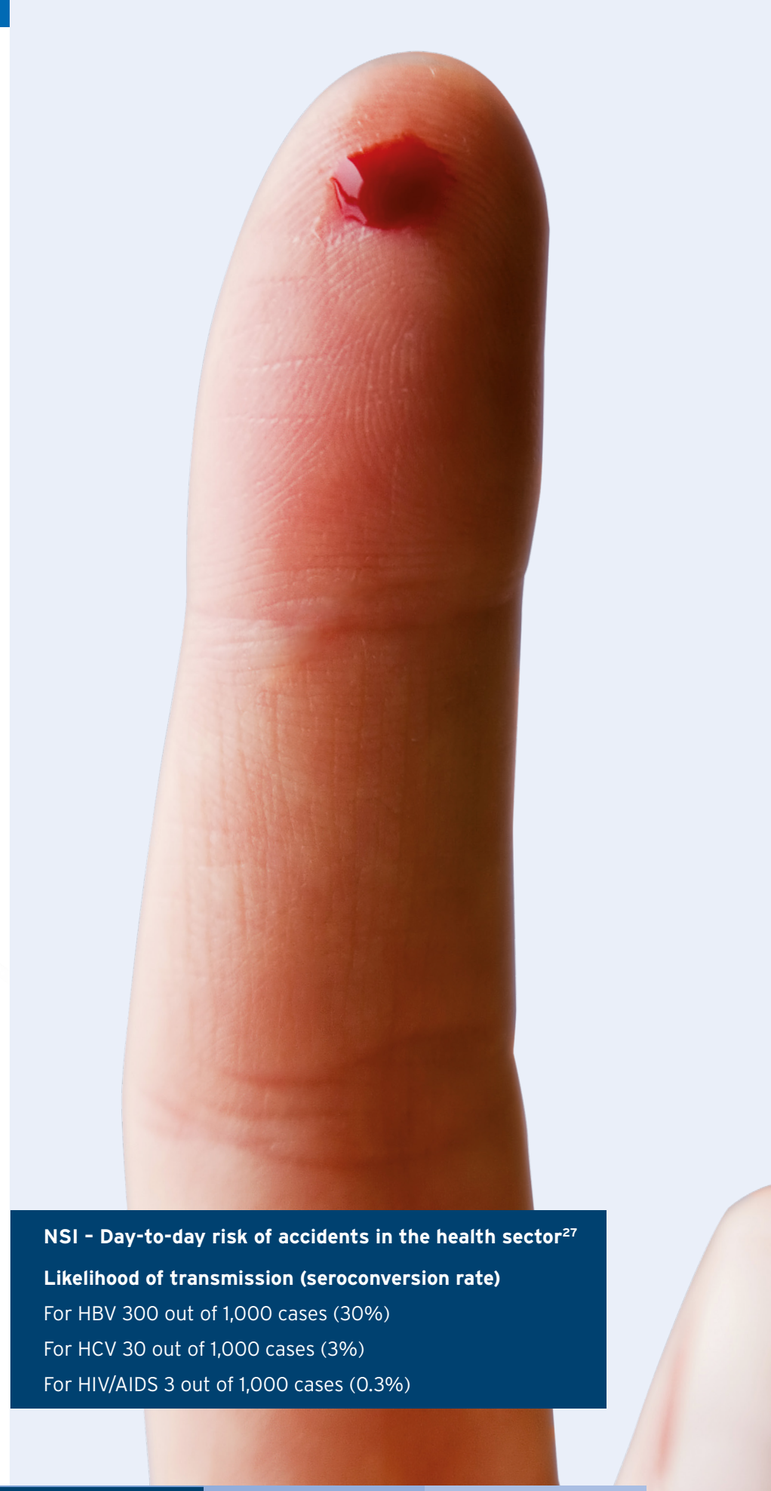
In an average hospital, workers incur approximately 12 to 30 needlestick injuries per 100 beds each year. However, it is estimated that between 60% and 80% of incidents go unreported. If suffering an injury from a contaminated 'sharp', the risk of transmission of infections is 1 in 3 workers for hepatitis B, 1 in 30 for hepatitis C and 1 in 300 for HIV. There can be considerable mental suffering since a lengthy process of diagnostic procedures must be followed before it is known if a serious disease has been contracted.

This fact is also being taken into account by lawmakers:

COUNCIL Directive 2010/32/EU of May 10th 2010 implementing the Framework Agreement on prevention from sharp injuries in the hospital and healthcare sector concluded by HOSPEEM and EPSU. It has to be implemented into all EU countries work's safety regulation from May 11th 2013.

As early as 2001, the Fresenius Kabi MedTech Division was one of the first companies in Germany to provide you with safety devices for clinical use.

For your occupational safety all of our application devices and systems are equipped with Council Directive 2010/32/EU-compliant safety features, wherever technologically feasible, in order to protect health sector personnel from the risk of infection due to needlestick injuries.



NSI – Day-to-day risk of accidents in the health sector[27]

Likelihood of transmission (seroconversion rate)

For HBV 300 out of 1,000 cases (30%)

For HCV 30 out of 1,000 cases (3%)

For HIV/AIDS 3 out of 1,000 cases (0.3%)

FRESENIUS KABI
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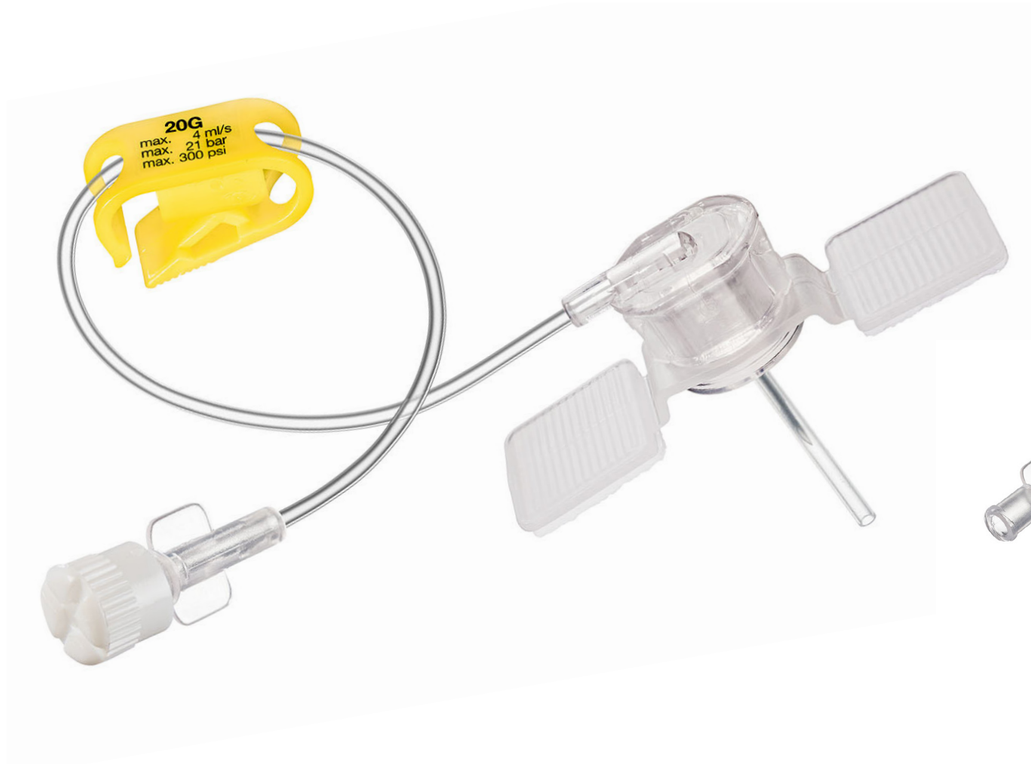
Central venous access - Ambix NONCORstick® Safe

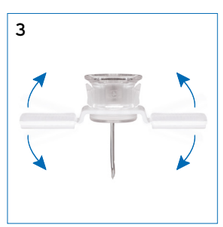
PVC FREE
LATEX FREE
DEHP FREE*

The safety port cannula system for non-coring puncture of port membranes and protection against needlestick injuries, cuts, and scratches

- Safety system with telescopic extension, complies with European Safety Directive 2010/32/EU to prevent needle stick injuries (Fig. 1)
- Cannula snaps permanently into place with audible and tangible click; no contact possible with cannula when secured and handled properly
- Colored & coded Safety-clamps: clear identification: Gauge, max. Flowrate; max. Pressure (Fig. 2)
- Flexible wings with comfortable pads: wearing comfort reduced irritation of the skin, allowed universal plaster-fixation (Fig. 3)
- Patented, spoon-shaped bevel enables non-coring puncture
- 20 cm extension tube from PUR
- As long as no complications occur, cannula can be placed in the port system up to 7 days
- For Chinese market only: available also with a Y-Site



SAFETY



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FRESENIUS KABI
caring for life

Central venous access - Ambix NONCORstick® Safe

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		Needle				Materials fluid path and in contact with patient				
Designation	**Article reference**	**Size (G)**	**Length (mm)**	**Flow-rate** (ml/sec)**	**Color Code**	**Connector and Y-Site**	**Tube**	**Holding segment**	**Needle**	**Pad**
Ambix NONCORstick® Safe	8084301	22	14	1.5	black	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Safe	8084311, 8084311CB *(PI)*	22	17	1.5	black	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Safe	8084321	22	20	1.5	black	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Safe	8084331	22	27	1.5	black	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Safe	8084265	20	10	4.0	yellow	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Safe	8084261, 8084262CB *(PI)*	20	14	4.0	yellow	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Safe	8084271, 8084271CB *(PI)*	20	17	4.0	yellow	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Safe	8084281, 8084281CB *(PI)*	20	20	4.0	yellow	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Safe	8084291	20	27	4.0	yellow	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Safe	8084295	20	35	4.0	yellow	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Safe	8084211, 8084211CB *(PI)*	19	14	5.0	white	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Safe	8084221	19	17	5.0	white	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Safe	8084231	19	20	5.0	white	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Safe	8084251	19	35	5.0	white	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Y-Site Safe	8084264CB *(PI)*	20	10	4.0	yellow	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Y-Site Safe	8084262CB *(PI)*	20	14	4.0	yellow	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Y-Site Safe	8084272CB *(PI)*	20	17	4.0	yellow	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Y-Site Safe	8084302CB *(PI)*	22	14	1.5	black	COPE	PUR	MABS	Stainless steel	Polyester fleece
Ambix NONCORstick® Y-Site Safe	8084312CB *(PI)*	22	17	1.5	black	COPE	PUR	MABS	Stainless steel	Polyester fleece

(PI - Phase in) COPE - Copolyester, PUR - Polyurethane, MABS - Methylmethacrylate Acrylonitrile Butadiene Styrene, Product Code: CB/CN - China

Priming volume 0.7 ml
** Measurement conditions: High pressure application: max. 21 bar/~300 psi; x-ray contrast medium: viscosity max. 12.6 mPa·s, 37°C

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

FRESENIUS KABI
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Central venous access - Ambix Intrastick® Safe

PVC FREE
LATEX FREE
DEHP FREE*

Safety port cannula system for non-coring puncture of port membranes and protection against needlestick injuries, cuts, and scratches

- Safety system with triple telescopic extension, complies with European Safety Directive 2010/32/EU to prevent needle stick injuries (Fig. 1)
- Cannula snaps permanently into place with audible and tangible click; no contact possible with cannula when secured and handled properly
- Patented, spoon-shaped bevel enables non-coring puncture
- Port cannula secured in position with integrated plaster
- Flow only possible with connected luer (Fig. 2)
- 20 cm extension tube from PUR
- Only for CB codes: color coding of needle cap
- As long as no complications occur, cannula can be placed in the port system up to 7 days

SAFETY


1


2

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Designation	Article reference	Neddle size (G)	Neddle length (mm)	Flow-rate** (ml/sec)	Materials fluid path and in contact with patient				
					Connector	Tube	Holding segment	Needle	Pad
Ambix Intrastick® Safe	8081211	19	14	5.0	MABS, Silicone, POM, PC	PUR	MABS	Stainless steel	Polyester fleece
Ambix Intrastick® Safe	8081221	19	17	5.0	MABS, Silicone, POM, PC	PUR	MABS	Stainless steel	Polyester fleece
Ambix Intrastick® Safe	8081231	19	20	5.0	MABS, Silicone, POM, PC	PUR	MABS	Stainless steel	Polyester fleece
Ambix Intrastick® Safe	8081241	19	27	5.0	MABS, Silicone, POM, PC	PUR	MABS	Stainless steel	Polyester fleece
Ambix Intrastick® Safe	8081251	20	10	4.0	MABS, Silicone, POM, PC	PUR	MABS	Stainless steel	Polyester fleece
Ambix Intrastick® Safe	8081261, 8081261CB	20	14	4.0	MABS, Silicone, POM, PC	PUR	MABS	Stainless steel	Polyester fleece
Ambix Intrastick® Safe	8081271, 8081271CB	20	17	4.0	MABS, Silicone, POM, PC	PUR	MABS	Stainless steel	Polyester fleece
Ambix Intrastick® Safe	8081281, 8081281CB	20	20	4.0	MABS, Silicone, POM, PC	PUR	MABS	Stainless steel	Polyester fleece
Ambix Intrastick® Safe	8081291	20	27	4.0	MABS, Silicone, POM, PC	PUR	MABS	Stainless steel	Polyester fleece
Ambix Intrastick® Safe	8081301, 8081301CB	22	14	1.5	MABS, Silicone, POM, PC	PUR	MABS	Stainless steel	Polyester fleece
Ambix Intrastick® Safe	8081311, 8081311CB	22	17	1.5	MABS, Silicone, POM, PC	PUR	MABS	Stainless steel	Polyester fleece
Ambix Intrastick® Safe	8081321	22	20	1.5	MABS, Silicone, POM, PC	PUR	MABS	Stainless steel	Polyester fleece
Ambix Intrastick® Safe	8081331	22	27	1.5	MABS, Silicone, POM, PC	PUR	MABS	Stainless steel	Polyester fleece

MABS – Methylmethacrylate Acrylonitrile Butadiene Styrene, POM – Polyoxymethylene, PC – Polycarbonate, PUR – Polyurethane, Product Code: CB/CN – China

Priming volume 0.7 ml; suitable for high flow rate application;
** Measurement conditions: High pressure application: max. 21 bar/~300 psi;
x-ray contrast medium: viscosity max. 12.6 mPa·s, 37°C;

*According to (EC) No 1907/2006 (REACH) less than 0.1% DEHP

FRESENIUS KABI
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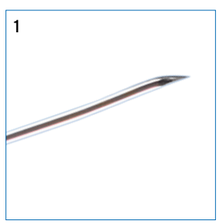
Central venous access - Ambix Safe-Can®

PVC FREE | LATEX FREE | DEHP FREE*

Special cannulas with spoon-shaped bevel for puncturing implantable port systems

- Non-coring cannulas with spoon-shaped bevel for bolus injection (Fig. 1)
- Available in straight or curved (90°) versions (Fig. 2)



Designation	Article reference	Size (G)	Length (mm)	Materials fluid path	
				Needle hub	Needle
Straight for bolus injection and pump filling					
Ambix Safe-Can® straight	5036711, 5036711CB	22	25 mm	PC	Stainless steel
Ambix Safe-Can® straight	5036721, 5036721CB	22	37 mm	PC	Stainless steel
Ambix Safe-Can® straight	5036801	22	60 mm	PC	Stainless steel
Ambix Safe-Can® straight	5036741, 5036741CB	20	37 mm	PC	Stainless steel
Curved (90°)					
Ambix Safe-Can® curved	5036761	20	25 mm	PC	Stainless steel
Ambix Safe-Can® curved	5036771	20	37 mm	PC	Stainless steel
Ambix Safe-Can® curved	5036781	22	25 mm	PC	Stainless steel
Ambix Safe-Can® curved	5036791	22	37 mm	PC	Stainless steel

PC - Polycarbonate, Product Code: CB/CN - China

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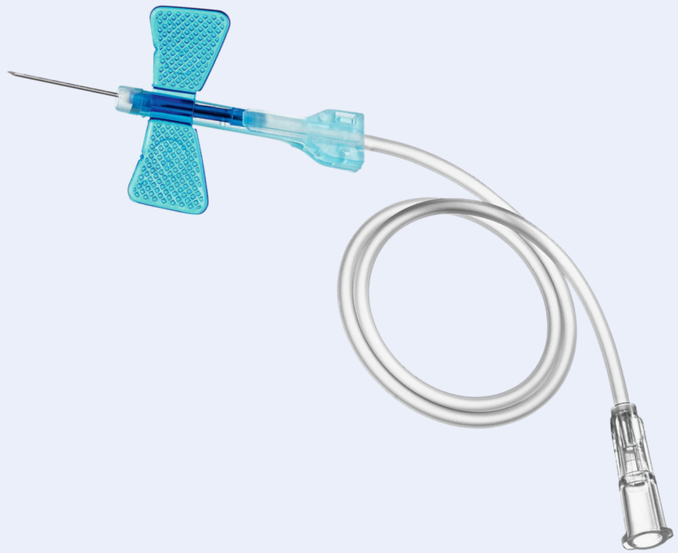
Peripheral venous access

Peripheral venous access is the most commonly used iv access in good clinical practice. It is applicable for administration of medication or infusions and for emergency. Therefore high demands are placed on the material and design of the catheter. Following performance characteristics shall be fulfilled:

- **Successful and painless puncture**
- **Ensuring no complication by long in-dwelling times**
- **Compatibility with drugs and interfacing tools**
- **Reduction of catheter associated infections**
- **Simple and safe handling**

Fresenius Kabi offers safety peripheral cannula Vasodrop Safety in sizes between 14 G–24 G. The cannula can be used with obturators. For reducing the risk of blood contact and contamination during handling, we recommend to use an extension line with a clamp and/or with or without a needle free access.

For short term venous access we offer Venodrop safe butterfly cannula in size 19 G-27 G.



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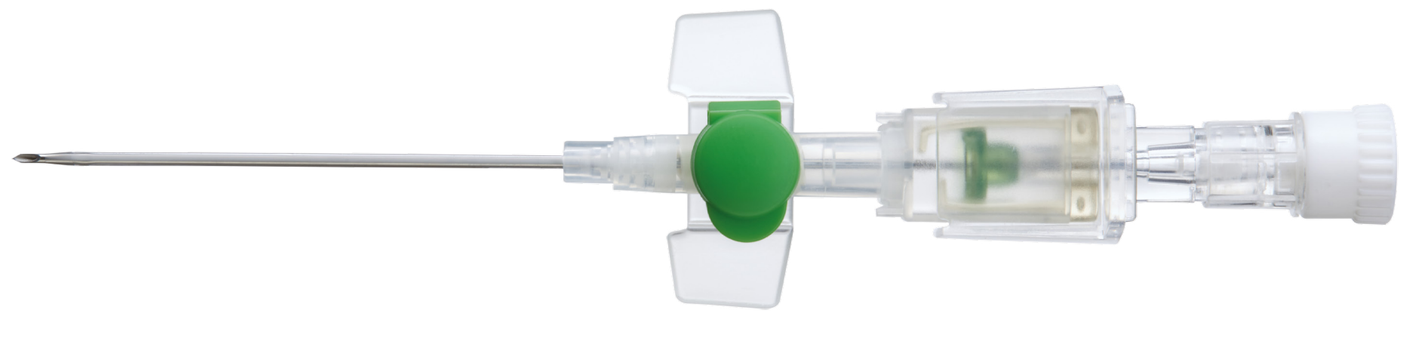
Peripheral venous access - Vasodrop® Safety

PVC FREE | LATEX FREE | DEHP FREE*

Dual entry safety peripheral venous catheter

- Color coded port for injection of medication
- Transparent backflow chamber for direct success detection of venous puncture
- Atraumatic puncture through triple sharpened backside cut of the cannula tip
- Polyurethane catheter high biocompatible for reduced irritation of the vein and longer dwell time
- Prevention of needle stick injuries through complete cover of the needle tip
- Complies to the European Safety Directive 2010/32/EU



							Materials fluid path				
Designation	Article reference	Color code	Gauge (G)	Outer needle diameter (mm)	Catheter length (mm)	Flow rate (mL/s)	Connector	Needle hub	Needle	Catheter	Valve
Vasodrop® Safety	8301700	orange	14	2.00	45	290	PP	ABS	Stainless steel	PUR	Silicone
Vasodrop® Safety	8301701	grey	16	1.75	45	225	PP	ABS	Stainless steel	PUR	Silicone
Vasodrop® Safety	8301702	white	17	1.50	45	155	PP	ABS	Stainless steel	PUR	Silicone
Vasodrop® Safety	8301703	green	18	1.30	32	103	PP	ABS	Stainless steel	PUR	Silicone
Vasodrop® Safety	8301704	green	18	1.30	45	96	PP	ABS	Stainless steel	PUR	Silicone
Vasodrop® Safety	8301705	pink	20	1.00	32	59	PP	ABS	Stainless steel	PUR	Silicone
Vasodrop® Safety	8301706	blue	22	0.90	25	42	PP	ABS	Stainless steel	PUR	Silicone
Vasodrop® Safety	8301707	yellow	24	0.74	19	29	PP	ABS	Stainless steel	PUR	Silicone

PP - Polypropylene, ABS - Acrylonitrile butadiene styrene, PUR - Polyurethane

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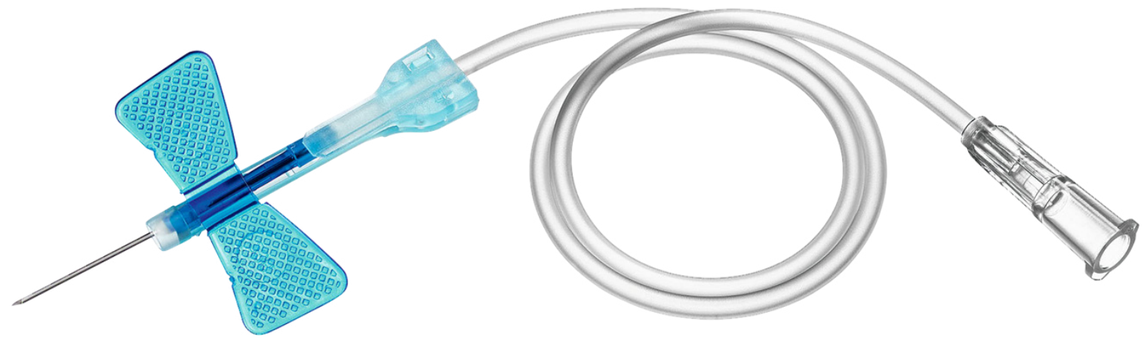
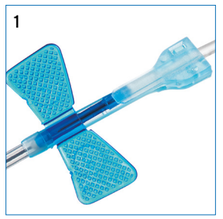
Peripheral venous access - Venodrop® Safety

LATEX FREE
DEHP FREE*

Safety venous puncture set for short term application

- Soft and color coded wings for flexible puncture and comfortable fixation
- Atraumatic puncture through triple sharpened backside cut of the cannula tip
- Safety mechanism has no sharp edges and covers the cannula tip after activation
- One hand technique for activation of the safety mechanism (Fig 1)
- Complies to the European Safety Directive 2010/32/EU
- Extension line ~30 cm
- Filling volume extension line 0.48 ml





Designation	Article reference	Color code	Gauge (G)	Outer needle diameter (mm)	Needle effective length (mm)	Flow rate (mL/s)	Materials fluid path		
							Connector	Needle	Tube
Venodrop® Safe	3274850	Cream	19	1.08	18	54-60	ABS	Stainless steel	PVC
Venodrop® Safe	3274851	green	21	0.81	18	23-29	ABS	Stainless steel	PVC
Venodrop® Safe	3274852	blue	23	0.63	18	9-14	ABS	Stainless steel	PVC
Venodrop® Safe	3274853	orange	25	0.51	18	2.6-4	ABS	Stainless steel	PVC
Venodrop® Safe	3274854	grey	27	0.41	18	1-1.5	ABS	Stainless steel	PVC

ABS - Acrylonitrile butadiene styrene, PVC - Polyvinyl chloride

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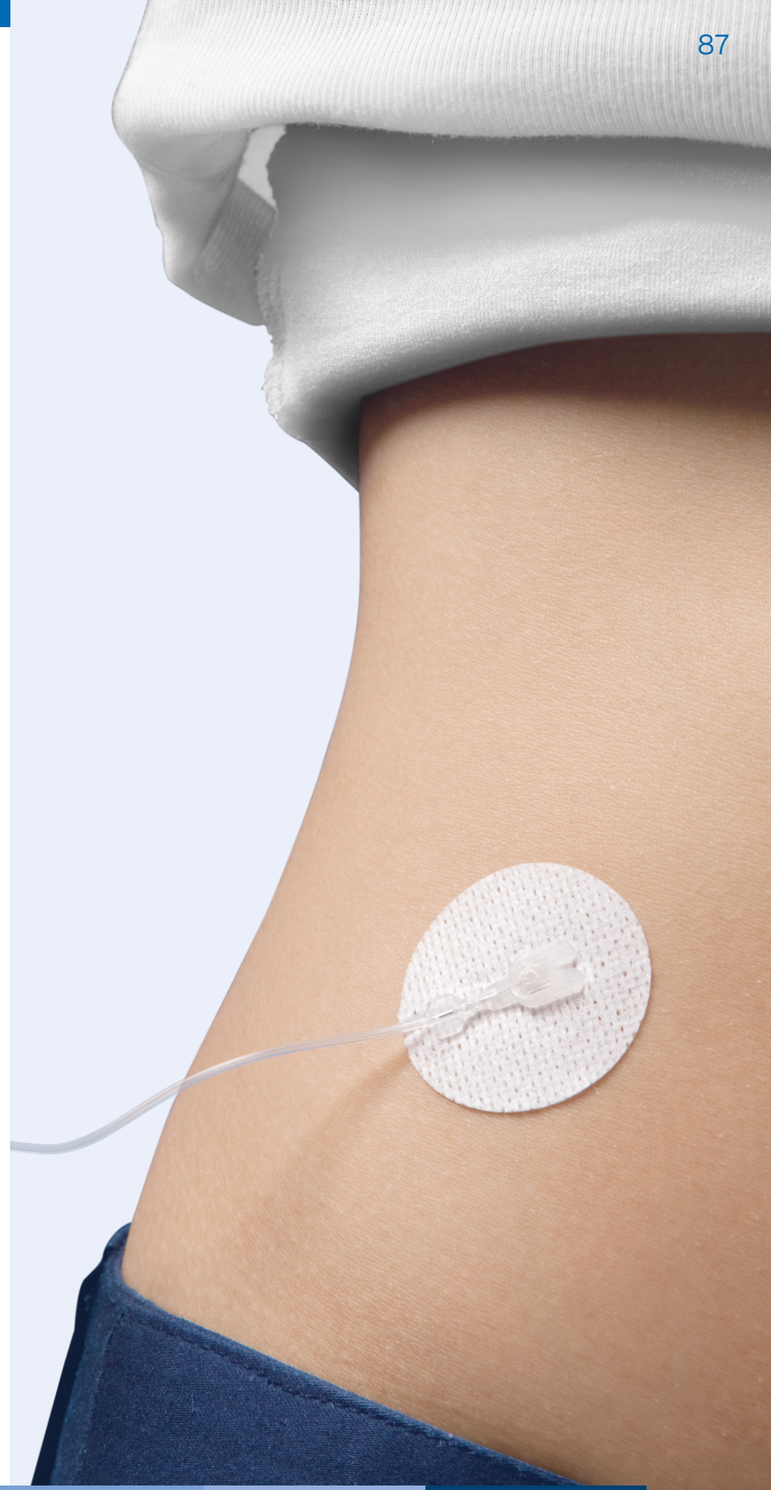
Subcutaneous access

Subcutaneous injection of medicaments allow a slow absorption of certain active substances and the maintenance of constant levels of such over a long period of time.[27]

Often heparin, insulin, painkillers and vaccines are applied in this way. The injection is preferably carried out in the skin of the belly or thighs, because of the good subcutaneous fat tissue.

For subcutaneous injection, cannulas shorter and finer than the usual ones (peripheral access, port access) are used. Subcutaneous access product shall meet following requirements:

- Ensure subcutaneous injection and avoid accidental intramuscular administration
- Simple and safe handling, which is also suitable for self-medication by patients
- Compatibility with drugs and interfacing tools



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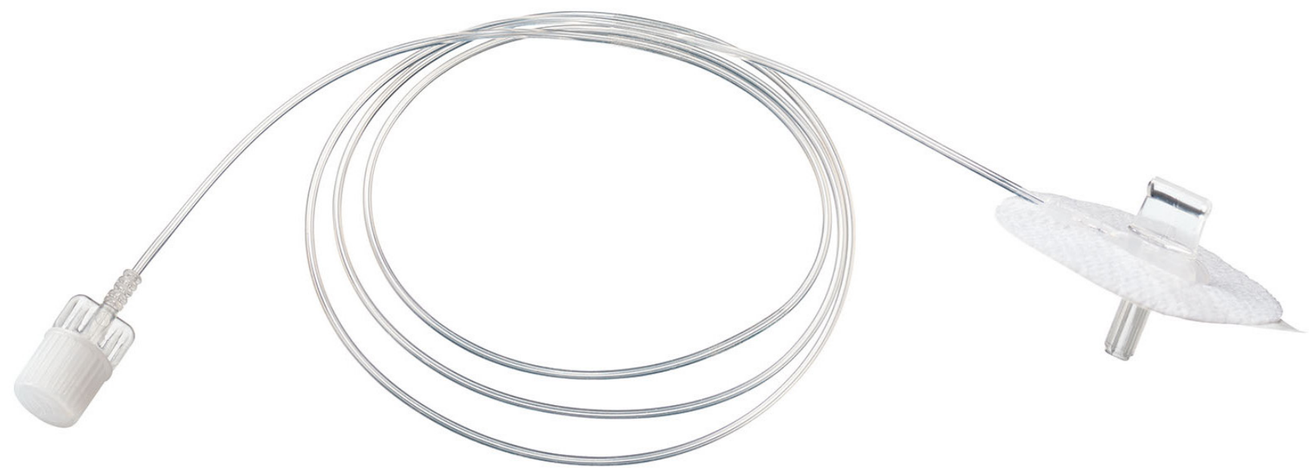
Subcutaneous access - Therastick

PVC FREE | LATEX FREE | DEHP FREE*

Subcutaneous cannula for:
pain- and antiviral therapy

- Grip plate can be removed after puncture as prevention of unintentional dislocation of the cannula (Fig. 1)
- Flexible, breathable and skin friendly plaster for safe fixation and wearing comfort[1]
- Efficient drug application due to small dead space
- Pressure resistant: 2 bar



					Materials fluid path and in contact with patient			
Designation	**Article reference**	**Gauge (G)**	**Cannula length (mm)**	**Extension line (cm)**	**Tube**	**Connector**	**Needle**	**Plaster**
Therastick	8088071	28	8	80	PE	EVA	Stainless steel	Single coated non-woven
Therastick	8088041	28	12	60	PE	EVA	Stainless steel	Single coated non-woven
Therastick	8088051	28	12	80	PE	EVA	Stainless steel	Single coated non-woven
Therastick	8088061	28	12	110	PE	EVA	Stainless steel	Single coated non-woven

EVA - Ethylene-vinyl acetate, PE - Polyethylene

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Quality Integrity Customer focus

Sustainability

...is an ongoing process to improve the overall ecological performance – for us and our future generations.

Waste

We are always evaluation and/or reflecting our process to perform a sustainable approach.

Development

Our eco-conceptional approach is part of our development process, e.g. the design of a product shall be compatible with the materials to be used, energy efficient, recyclable, disposable, logistic friendly and be low on waste and emissions.

Production

To be able to deliver the nearby markets directly, we do have different production units. The place of production is part of our label.

Transport

We take actions to limit the ecological footprint, we are downsizing our ways of transportation, e.g. by building up regional production units, reducing external ways of transportation by localizing our sources of raw materials and insourcing of components and direct delivery from production units to nearby markets.

Packaging

Sterility is maintained via the primary packaging which is called the 'Sterile Barrier System'.

We, Fresenius Kabi, as a health care company are committed to protect nature as the basis of life and to use its resources responsibly.

More information up on request available.

Volumat Lines	Secondary Lines	Injectomat syringe/lines	Ambulatory Infusion Systems	Accessories	Infusion filtration	Medication preparation	Central venous access	Peripheral venous access	Subcutaneous access

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Key word/product index, in alphabetical order

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