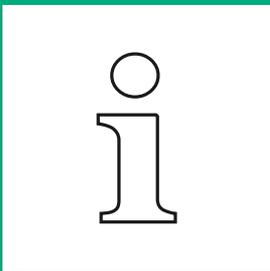**B BRAUN**
SHARING EXPERTISE

B. BRAUN
VET CARE

Infusion therapy

In veterinary medicine

Please note that some products require a specific local registration and might not be available in your country. Please get in touch with your local contact.

Information:
The catalog only shows an excerpt from our full infusion therapy portfolio. If you are interested in other products, please contact us.
eMail: info@bbraun-vetcare.de

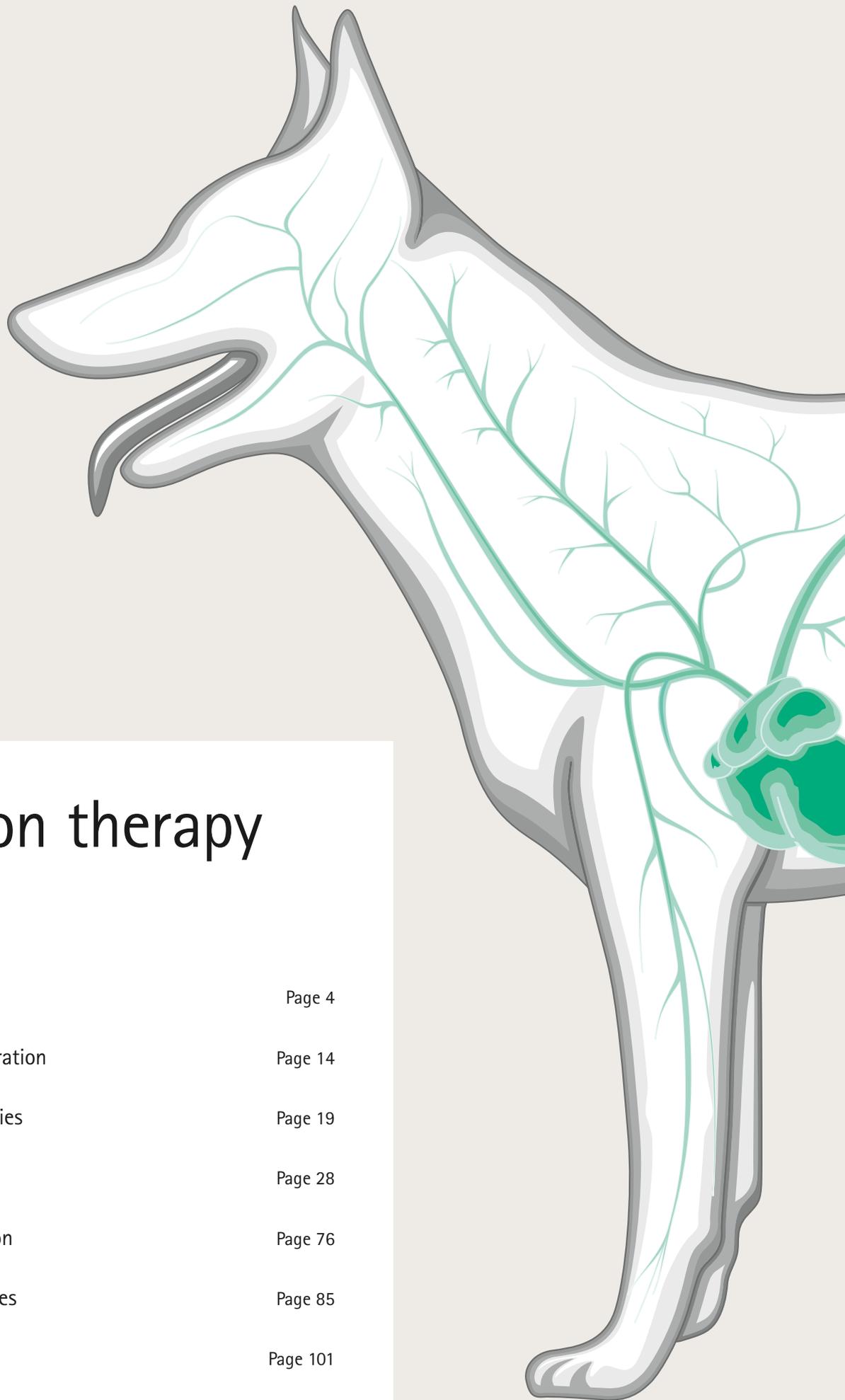The "Infusion therapy" brochure is an excerpt from our full catalog.

Order complete catalog – Vet Care
www.bbraun-vetcare.com/ordercompletecatalog

Website:
www.bbraun-vetcare.com/infusiontherapy

Infusion therapy

Venous access

Peripheral venous access

VasoVet® the veterinary catheter

PUR indwelling venous catheter with injection port for vein-conserving placement with reduced pain

- 3-facet cut geometry offers good puncture characteristics
- Flexible puncture angle (10°- 45°)
- Reduced puncture resistance
- Polyurethane catheters are durable but gentle to veins, allowing the catheter to remain longer in the vein
- Four radiopaque contrast strips embedded into the transparent catheter capillary
- Integrated injection port: Medications can be administered quickly without re-puncture
- Water-repellent blood stopper
- Removable locking cone
- Luer-Lock connector
- Size color-coding

| Type	Flow	Inner diameter	Diameter x length	Sales unit	Art. no.
■ VasoVet® G24	22 mL/min	0.51 mm	0.7 x 19 mm	50 pcs	4269075
■ VasoVet® G22	36 mL/min	0.61 mm	0.9 x 25 mm	50 pcs	4269102
■ VasoVet® G20	65 mL/min	0.76 mm	1.1 x 25 mm	50 pcs	4269219
■ VasoVet® G20	61 mL/min	0.76 mm	1.1 x 33 mm	50 pcs	4269115
■ VasoVet® G18	103 mL/min	0.96 mm	1.3 x 33 mm	50 pcs	4269355
■ VasoVet® G18	96 mL/min	0.96 mm	1.3 x 45 mm	50 pcs	4269138
■ VasoVet® G14	343 mL/min	1.75 mm	2.2 x 50 mm	50 pcs	4269228

VasoVet® G14, long

Indwelling venous catheter made of vein-conserving PUR for large animal care

- 3-facet cut geometry offers good puncture characteristics
- Flexible puncture angle (10° - 45°) Reduced puncture resistance
- Polyurethane catheters are durable but gentle to veins, allowing the catheter to remain in the vein for longer
- Four radiopaque contrast strips embedded into the transparent catheter capillary
- Integrated injection port: Medications can be administered quickly without re-puncture
- Removable locking cone
- Luer-Lock connector

Type	Flow	Inner diameter	Diameter x length	Sales unit	Art. no.
■ VasoVet® G14	275 mL/min	1.75 mm	2.2 x 100 mm	10 pcs	4269226

VasoVet®

Supple polyurethane catheter with double-flashback technology
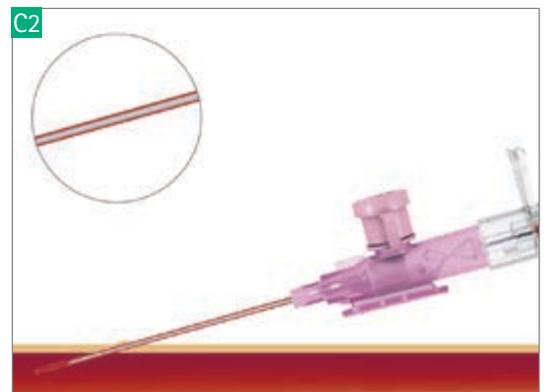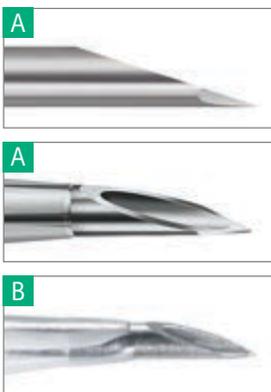
3-facet cut (A)

- Flexible puncture angle
- Limited puncture pain
- Reduced puncture resistance

Soft PUR capillary (B)

- Gentle on vein walls
- Long dwell time

Double-flashback technology

- Allows secure identification of successful puncture
- First flashback shows that the needle is in the vein (C1)
- Second flashback shows that the capillary is in the vein (C2)

VasoVet® - in brief.
Click here for the YouTube video

www.bbraun.info/ivisw

Venous access

Peripheral venous access

Vasofix® Safety

Safety catheter with FEP or polyurethane catheter makes placement gentle on veins and allows a softer and more comfortable indwelling performance

- With integrated, self-activating safety clip that secures the needle tip immediately after withdrawal
- Integrated injection port allows quick medication application with no additional puncture required
- 3-facet cut geometry offers good puncture characteristics
- Flexible puncture angle (10°- 45°)
- Reduced puncture resistance
- Highly transparent blood chamber, water-repellent blood stopper
- Capillary has four fully embedded radiopaque strips
- Luer-Lock connector, removable locking cone
- Size color-coding
- Latex- and PVC-free

Fulfills requirements on safe work equipment pursuant to TRBA 250

Gauge	Flow	Inner diameter	Diameter x length	Sales unit	Art. no.
Vasofix® Safety – FEP catheter					
■ 22G	36 mL/min	0.63 mm	0.9 x 25 mm	50 pcs	4268091S-01
■ 20G	61 mL/min	0.80 mm	1.1 x 33 mm	50 pcs	4268113S-01
■□ 18G	103 mL/min	0.99 mm	1.3 x 33 mm	50 pcs	4268334S-01
■ 18G	96 mL/min	0.99 mm	1.3 x 45 mm	50 pcs	4268130S-01
Vasofix® Safety – polyurethane catheter					
■ 24G	22 mL/min	0.48 mm	0.7 x 19 mm	50 pcs	4269071S-01
■ 22G	36 mL/min	0.61 mm	0.9 x 25 mm	50 pcs	4269098S-01
■□ 20G	65 mL/min	0.82 mm	1.1 x 25 mm	50 pcs	4269217S-01
■ 20G	61 mL/min	0.82 mm	1.1 x 33 mm	50 pcs	4269110S-01
■□ 18G	103 mL/min	0.98 mm	1.3 x 33 mm	50 pcs	4269330S-01
■ 18G	96 mL/min	0.98 mm	1.3 x 45 mm	50 pcs	4269136S-01

Vasofix® Safety is our indwelling venous catheter with integrated, self-activating protective mechanism to prevent needle-stick injuries and reduce the potential risk of infection.

Disinfect the surface of the skin to be punctured[1] and check the catheter before using. Choose the angle of puncture based on vein and skin condition as well as clinical requirements.

Guide the Vasofix® Safety I.V. into the vein and monitor blood return flow. Advance catheter and cannula approximately 1-3 mm. Then hold the needle and advance the catheter over the needle into the vein. Visible blood return in the catheter confirms correct positioning.

Interrupt blood return flow using a "V grip". Remove the steel cannula. The patented Safety Clip will automatically surround the contaminated steel cannula tip. Immediately dispose of the steel cannula by placing it in a puncture-proof disposal container.

Connect the infusion to the catheter connector and protect the puncture site using a sterile bandage*.

* We recommend **Askina® Soft I.V.**

Caresite® the membrane valve

For injections and infusions

Easy visual inspection

Easy disinfection

Benefits to you

Reduces catheter occlusion

- Positive irrigation volume helps prevent blood coagulation and catheter clogging

Safe & hygienic working

- Needle-free injection & aspiration
- Smooth surface allows thorough disinfection
- Transparent housing facilitates visual inspection
- Reduces contamination and provides an effective microbial barrier

Simple handling

- Allows therapy to be paused

Have you ever experienced this? Soon after disconnecting the patient from the infusion, you find blood in the extension, or you discover that the catheter is blocked?

The Caresite® valve's automatic flushing feature keeps positive pressure inside the catheter during disconnection, which prevents large amounts of blood from entering the catheter.

The valve can be easily disinfected between connections, which protects the venous catheter from bacterial contamination.
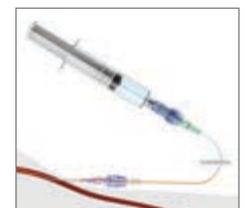
Wrong

Here is an example without a Caresite® valve. Blood is visible in the extension.
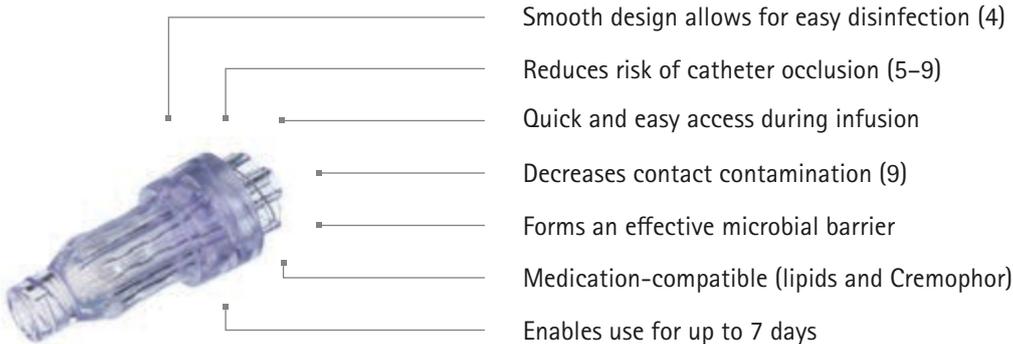
Right

Positive occlusion pressure prevents large amounts of blood from entering the catheter.

Caresite® the membrane valve

For injections and infusions

Caresite® is a closed system with a needle-free valve that reduces the risk of air embolisms and helps to avoid external contamination (1–4).

Smooth design allows for easy disinfection (4)

Reduces risk of catheter occlusion (5–9)

Quick and easy access during infusion

Decreases contact contamination (9)

Forms an effective microbial barrier

Medication-compatible (lipids and Cremophor)

Enables use for up to 7 days

CLOSED SYSTEM

Type	Sales unit	Art. no.
Caresite®	10 pcs	41512201

References

(1) Test report – Evaluation of the microbial barrier performance of Caresite® valve against sporesog Bacillussubtilis signed by Prof. Dr. med. M.Exner and Dr. rer. nat. J. Gebe!, Report DMT 2013-412, 11-12-2013.

(2) Test report – Closed system test by means of Sodium Fluorescein signed by Dr. rer. nat. J. Brünke Quality Labs BT GmbH Nuremberg, Report 1678.2-1, 28-05-2013.

(3) Test report – Evaluation of the microbial barrier performance of the female valve Caresite® by touch contamination with Staphylococcus aureus signed by Prof. Dr. med. M.Exner and Dr. rer. nat. J. Gebe!, Report DMT 2014-194, 09-12-2014.

(4) White Paper: Caresite® Luer Access Device (LAD): 7- Day Microbial Barrier Performance, B. Braun Medical Inc., Bethlehem, PA., 15-5669 SW, 2017.

(5) Journal of Vascular Access Devices, Volume 5, Issue 4, 2000, Page 31-33, The effects of positive pressure devices on catheter occlusions, Loretta Berger RN, CRNI.

(6) Leone M, Dillon R. Catheter outcomes in home infusion. JIN March/April 2008 Vol 31, No2.

(7) White Paper: Caresite® Luer Access Device: Blood Clearance Test of the Needleless Connector, 8. Braun Medical Inc. Bethlehem, PA, CS05_ 07/IO_EB. 2010.

(8) White Paper: Caresite® Luer Access Device: Mechanical Hemolysis Test of the Needleless Connector, 8. Braun Medical Inc., Bethlehem, PA., CS06_ 07/10_E8, 2010.

(9) The-ASAP Product Evaluation Programme (PEP), Product Evaluation Programme (PEP): Evaluation of Caresite® Luer Access Device, March 2016.

Softa® Swabs

Alcohol swabs

Description

▪ Alcohol swabs soaked in 70% isopropyl alcohol

Properties

▪ Disposable alcohol swabs for cleaning skin

▪ Absorbent, lint-free fleece

▪ Swab size 32 x 67 mm

▪ Sales unit: 100 pc

Type	Sales unit	Art. no.
Softa® Swabs	100 pcs	19579

Venous access

Peripheral venous access

IntroVet

PUR indwelling venous catheter for vein-conserving placement with reduced pain

- IntroVet polyurethane catheter material
- No fixation wings, allows one-handed puncture technology
- 3-facet cut geometry offers good puncture characteristics
- Flexible puncture angle (10°- 45°)
- Reduced puncture resistance
- Highly transparent blood chamber, water-repellent blood stopper
- Capillary has four fully embedded radiopaque strips
- Luer-Lock connector, removable locking cone
- Size color-coding
- Latex- and PVC-free

Gauge	Flow	Inner diameter	Diameter x length	Sales unit	Art. no.
IntroVet: PUR catheter material					
■ 24G	22 mL/min	0.48 mm	0.7 x 19 mm	50 pcs	4251300V
■ 22G	35 mL/min	0.61 mm	0.9 x 25 mm	50 pcs	4251318V
■ 20G	60 mL/min	0.82 mm	1.1 x 32 mm	50 pcs	4251326V
▯ 18G	105 mL/min	0.98 mm	1.3 x 32 mm	50 pcs	4251342V
■ 18G	100 mL/min	0.98 mm	1.3 x 45 mm	50 pcs	4251334V
■ 16G	210 mL/min	1.34 mm	1.7 x 50 mm	50 pcs	4251350V
■ 14G	345 mL/min	1.75 mm	2.2 x 50 mm	50 pcs	4251369V

Venous access

Peripheral venous access

IntroVet W

PUR indwelling venous catheter for vein-conserving placement with reduced pain

- IntroVet W polyurethane catheter material
- With fixation wings, allows one-handed puncture technology
- 3-facet cut geometry offers good puncture characteristics
- Highly transparent blood chamber, water-repellent blood stopper
- Capillary has four fully embedded radiopaque strips
- Luer-Lock connector, removable locking cone
- Size color-coding, latex and PVC-free

| Gauge	Flow	Inner diameter	Diameter x length	Sales unit	Art. no.
IntroVet W: PUR catheter material					
24G	22 mL/min	0.48 mm	0.7 x 19 mm	50 pcs	4253302V
22G	35 mL/min	0.61 mm	0.9 x 25 mm	50 pcs	4253310V
20G	60 mL/min	0.82 mm	1.1 x 32 mm	50 pcs	4253329V
18G	105 mL/min	0.98 mm	1.3 x 32 mm	50 pcs	4253345V
18G	100 mL/min	0.98 mm	1.3 x 45 mm	50 pcs	4253337V
16G	210 mL/min	1.34 mm	1.7 x 50 mm	50 pcs	4253353V
14G	345 mL/min	1.78 mm	2.2 x 50 mm	50 pcs	4253361V

Braunüle® Vet High Flow PUR

Indwelling venous catheter made of vein-conserving PUR for large animal care

- Polyurethane catheters are durable but gentle to veins, allowing the catheter to remain in the vein for longer time
- Grip plates to guide cannula securely
- Wings for secure catheter fixation
- Radiopaque contrast stripe
- Water-repellent blood stopper
- Luer Lock connector
- 100 mm long

Product	Inner diameter	Diameter x length	Sales unit	Art. no.
Braunüle® Vet High Flow G14 PUR	1.75 mm	2.45 x 100 mm	50 pcs	097010-001

Central venipuncture

Seldinger technique
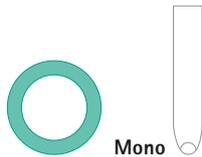
Certofix® Mono

Single-lumen cava catheter sets for catheterization of the vena cava using the Seldinger method with option of intra-atrial EKG shunt

- "S" models have Seldinger cannula
- Kink-resistant Nitinol-Seldinger wire with flexible J-tip
- Dilator
- PUR catheter with soft tip
  - radiopaque
  - length markings
  - transparent tube line with sliding clamp for short-term closure
  - fixation wings at catheter branch point to secure catheter
  - attached, adjustable fixation wings for suture attachment to the catheter outlet point (catheter lengths 20 and 30 cm)
- Omnifix® Luer lock syringe, 5 mL
- EKG connection cable for universal adapters, used in intra-atrial EKG shunts

Mono

Product	Catheter diameter	Catheter length	Wire length	Cannula	Sales unit	Art. no.
Certofix® Mono S 215	18	15	50	Seldinger	10 pcs	4160185-07
Certofix® Mono S 220	18	20	50	Seldinger	10 pcs	4160207-07
Certofix® Mono S 315	16	15	50	Seldinger	10 pcs	4160223-07
Certofix® Mono S 320	16	20	50	Seldinger	10 pcs	4160258-07
Certofix® Mono S 330	16	30	70	Seldinger	10 pcs	4160282-07
Certofix® Mono S 415	14	15	50	Seldinger	10 pcs	4160509-07
Certofix® Mono S 420	14	20	50	Seldinger	10 pcs	4160304-07
Certofix® Mono S 430	14	30	70	Seldinger	10 pcs	4160762-07

Certofix® Duo Paed

Especially small-lumen catheter

Duo
— proximal
— distal
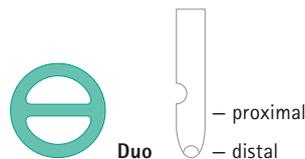
Product	Length	External diameter	Rate	Sales unit	Art. no.
Certofix® Duo Paed S 408 Puncture cannula G21, 0.8 mm x 38 mm	8 cm	1.4 mm	2 x 18 mL/min	10 pcs	4166906-07
Certofix® Duo Paed S 420 Puncture cannula G21, 0.8 mm x 38 mm	20 cm	1.4 mm	2 x 9 mL/min	10 pcs	4166949-07

Central venipuncture
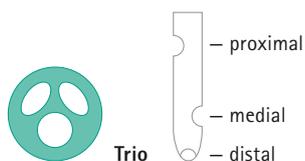
Seldinger technique
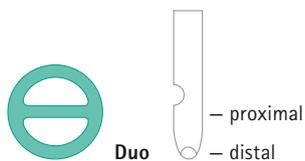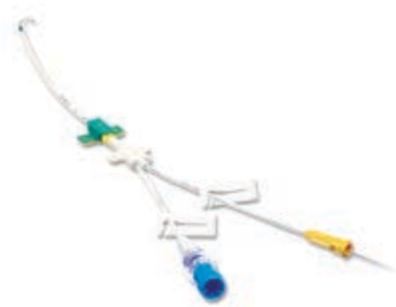
Certofix® Duo

Dual-lumen cava catheter sets for catheterization of the vena cava using the Seldinger method with option of intra-atrial EKG shunt

- "S" models have Seldinger cannula
- Kink-resistant Nitinol-Seldinger wire with flexible J-tip
- Dilator
- PUR catheter with soft tip
  - radiopaque
  - length markings
  - transparent tube line with sliding clamp for short-term closure
  - fixation wings at catheter branch point to secure catheter
  - attached, adjustable fixation wings for suture attachment to the catheter outlet point
  - attachment clip
- Safsite® valves
- Cutfix® scalpel Fig. 11
- Omnifix® Luer lock syringe, 5 mL
- EKG connection cable for universal adapters, used in intra-atrial EKG shunts

Duo — proximal / — distal

Product	Catheter diameter	Catheter length	Wire length	Cannula	Sales unit	Art. no.
Certofix® Duo S 720	16G / 16G	20 cm	50 cm	Seldinger	1 pc	4167385-07
Certofix® Duo S 730	16G / 16G	30 cm	70 cm	Seldinger	1 pc	4167394-07

Certofix® Trio

Tri-lumen cava catheter sets for catheterization of the vena cava using the Seldinger method with option of intra-atrial EKG shunt

- "V" models have valve cannula
- "S" models have Seldinger cannula
- Kink-resistant Nitinol-Seldinger wire with flexible J-tip
- Dilator
- PUR catheter with soft tip
  - radiopaque
  - length markings
  - transparent tube line with sliding clamp for short-term closure
  - fixation wings at catheter branch point to secure catheter
  - attached, adjustable fixation wings for suture attachment to the catheter outlet point (catheter lengths 20 and 30 cm)
  - attachment clip
- Safsite® valves
- Cutfix® scalpel Fig. 11
- Omnifix® Luer lock syringe, 5 mL
- EKG connection cable for universal adapters, used in intra-atrial EKG shunts

Trio — proximal / — medial / — distal

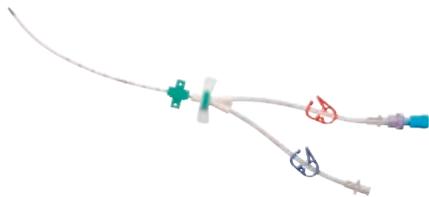| Product	Catheter diameter	Catheter length	Wire length	Cannula	Sales unit	Art. no.
Certofix® Trio S 720	16G / 1 8G / 18G	20 cm	50 cm	Seldinger	10 pcs	4167408-07

Certofix® Duo HF

Dual-lumen cava catheter sets for catheterization of the upper vena cava using the Seldinger method with option of intra-atrial EKG shunt for high flow rates and acute dialysis

- Valve cannula = V
- 18 G/70 mm
- Guide probe type "Nitinol"
- With flexible J-tip
- Omnifix® Lock syringe, 5 mL
- Cutfix® scalpel, Fig. E 11
- Dilator
- Fits conventional catheter sizes
- Soft-tip PUR catheter
  - radiopaque
  - dual lumen
  - with Safsite® valves
  - catheter marking for position checks
  - color-coded lock connectors
  - fixation wings at catheter branch point for catheter attachment
  - attached, adjustable fixation wings for suture attachment to catheter exit site (catheter length 20 cm)
- ECG connection cable for universal adapter
- Attachment clip
- Safety features:
  - kink-resistant Nitinol-Seldinger wire
- Accessories for ECG lead
- Safsite® valves
- "V" models have valve cannula

Product	Catheter diameter	Catheter length	Wire length	Cannula	Sales unit	Art. no.
Certofix® Duo HF 715	14/18	15	50	Valve cannula	10 pcs	4168518-07
Certofix® Duo HF720	14/18	20	50	Valve cannula	10 pcs	4168534-07
Certofix® Duo HF720	14/18	20	50	Valve cannula	10 pcs	4168528-07
Certofix® Duo HF920	13/13	20	50	Valve cannula	10 pcs	4167511-07
Certofix® Duo HF1215	11/11	15	50	Valve cannula	10 pcs	4167538-07
Certofix® Duo HF1220	11/11	20	50	Valve cannula	10 pcs	4167546-07

Safe medication formulation

Transfer sets & accessories

Sterican® Mix

Semi-blunt cannulae for preparing medications

- For drawing solutions from glass ampullae with piercable stoppers
- 40° cut to reduce punching
- Thin-walled cannulae ensure quick filling
- Made of rust-free chromium-nickel steel
- Polypropylene Luer lock connection
- Semi-blunt cannulae are color-coded with red protective caps
- 100 pc. package
- Individually packaged sterile

Gauge x length	Diameter x length	Sales unit	Art. no.
■ 18G x 1^1/$_2$"	1.2 x 40 mm	1 pack	4550400-01

Transofix®

Transfer spike for sterile liquids

- Can be used to dissolve lyophilisates, mix solutions and medications
- Allows easy transfer of liquids from glass containers
- Two slim, slightly siliconized piercing needles, cut round to prevent rubber particle shearing
- Comfortable grip plate
- Latex-, PVC- and DEHP-free

Type	Sales unit	Art. no.
Transofix® transfer set	50 pcs	4090500

Sterifix® filter straws

Filter straws for withdrawal and filtration of medications from break-seal ampullae

- Reduced risk of loose ampulla particles
- Reduces needle-stick injuries
- Integrated 5 µm particle filter
- Flexible, blunt tube
- Latex-free
- Luer Lock connector

Type	Tube length	Sales unit	Art. no.
Sterifix® filter straw	10 cm	50 pcs	4550200
Sterifix® filter straw	4.5 cm	50 pcs	4550250

Mini-Spike®

Hygienic multiple-withdrawal containers

Mini-Spike®

Withdrawal and injection spike for multi-dose containers

- Mini-Spike®
  – Integrated, bacteria-proof 0.45 µm aeration filter
  – Green snap-on lid to protect Luer lock connection
- Mini-Spike® with microtip
  – Money-saving microtip draws residual medication from small containers

Type	Sales unit	Art. no.
Standard tip	50 pcs	4550242
Microtip	50 pcs	4550510

Mini-Spike® filter

Withdrawal and injection spike for multi-dose containers

- Mini-Spike® Filter
  – integrated, bacteria-proof 0.45 µm aeration filter
  – integrated 5 µm particle filter that traps particles > 5 µm
  – blue snap-on lid to protect Luer lock connection
- Mini-Spike® filter with microtip
  – money-saving microtip draws residual medication from small containers

Type	Sales unit	Art. no.
Standard tip	50 pcs	4550234
Microtip	50 pcs	4550528

Mini-Spike®

Hygienic multiple-withdrawal containers

User advantages –
Mini-Spike® and Mini-Spike® 2

- Contamination protection
- Automatization of pressure balancing
- No air bubbles when filling
- Fill in rapid succession
- Easy dosage measurement
- Luer slip or Luer lock syringes

Green: For multiple-withdrawal containers in which the medication is already in liquid form.

Blue: For multiple-withdrawal containers in which the medication is in powder form and needs to be dissolved first.

Mini-Spike® /
Mini-Spike® V

Snap-on lid protects against contact contamination

Valve*

Fluid channel

Bacteria-resistant aeration filter*

Particle filter*

Spike

*Depending on product version.
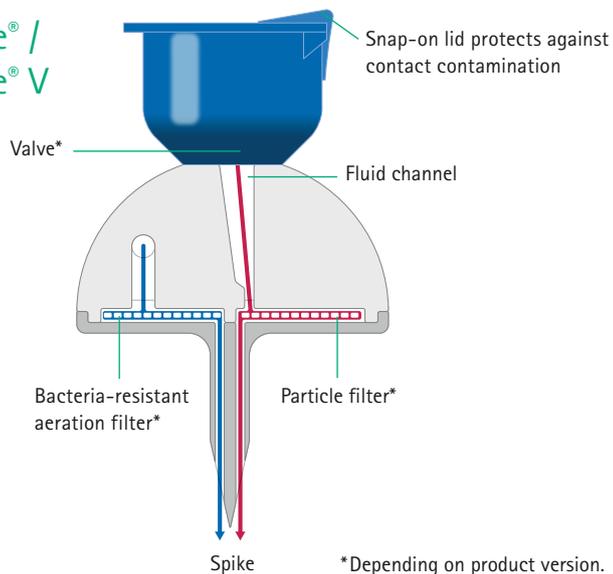
Mini-Spike® usage tips

1
Remove protective cap from vial, disinfect stopper.

2
Take out Spike and remove protective cap from tip. Do not touch the sharp tip when doing so.

3
Insert spike into the disinfected vial stopper.

4
Open snap closure.
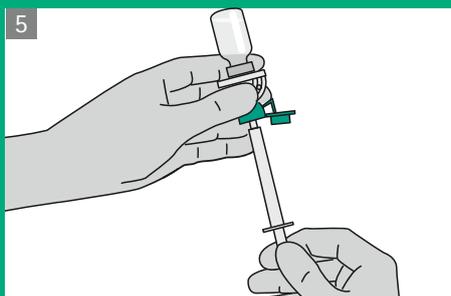
5
Connect syringe and quickly draw desired volume overhead.
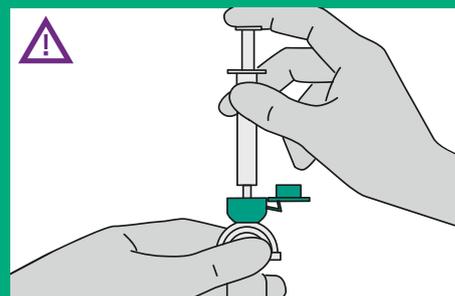
⚠
After setting the vial aside, disconnect the syringe.

Mini-Spike® 2

Hygienic multiple-withdrawal containers

Mini-Spike® 2, Mini-Spike® 2 Filter, Mini-Spike® 2 Chemo
Withdrawal and injection spike for multiple-withdrawal containers
with integrated safe-flow valve

- With integrated, needle-free safe-flow valve
- Easy to disinfect exposed valve
- Valve opens when Luer lock or Luer slip syringe is connected,
  and automatically closes when used syringe is disconnected
- Integrated valve allows no-drip withdrawal overhead
- Reduces leaks

Mini-Spike® 2
- With integrated, bacteria-proof 0.45 μm aeration filter

Type	Sales unit	Art. no.
Mini-Spike® 2	50 pcs	4550590

Mini-Spike® 2 Filter
- With integrated, bacteria-proof 0.45 μm aeration filter
- With integrated 5 μm particle filter that traps particles > 5 μm

Type	Sales unit	Art. no.
Mini-Spike® 2 Filter	50 pcs	4550591

Mini-Spike® 2 Chemo
- With integrated bacteria-proof 0.2 μm ventilation filter to protect against aerosols
- With integrated 5 μm particle filter that traps particles > 5 μm
- Protection against toxic aerosols when preparing cytostatic solutions,
  reduced risk of contamination

Type	Sales unit	Art. no.
Mini-Spike® 2 Chemo	50 pcs	4550592

Mini-Spike® 2

Hygienic multiple-withdrawal containers

Mini-Spike® 2

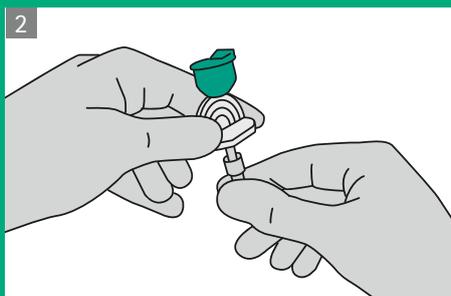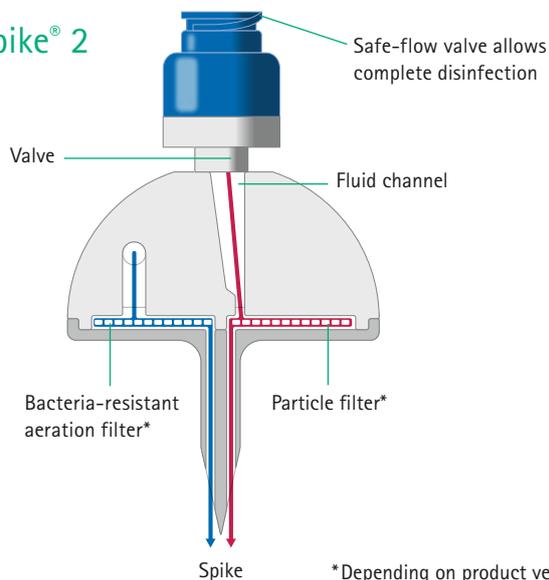Safe-flow valve allows complete disinfection

Valve

Fluid channel

Bacteria-resistant aeration filter*

Particle filter*

Spike

*Depending on product version.

Safe-flow valve

Seal

Seal
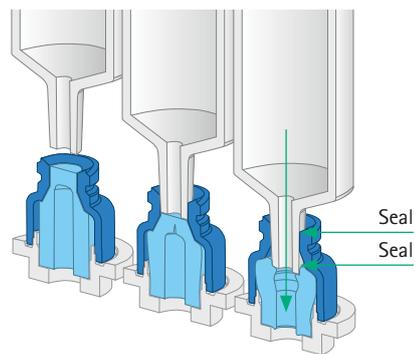
The safe-flow valve is exposed, making it easy to disinfect. The needle-free valve opens upon connection and automatically closes upon disconnection, thus allowing fluids to be drawn overhead without difficulty.

Mini-Spike®usage tips 2

1

Remove protective cap from vial, disinfect stopper.

2a **2b**
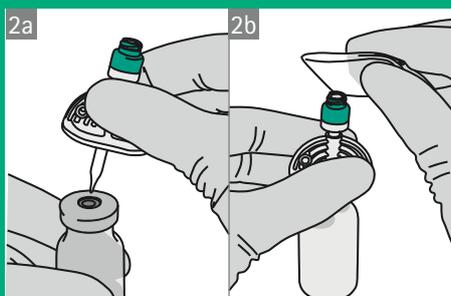
a) Remove the protective cap from the spike and pierce it into the vial by holding the grip plate on the Mini-Spike® 2. Make sure not to touch the female Luer lock connector on the Safeflow valve when doing so.
b) Disinfect the female Luer lock connector with a moistened disinfection cloth or the SwabCap® disinfection cap.
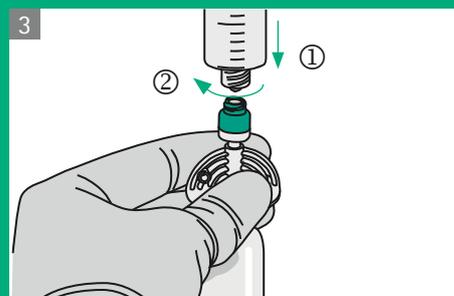
3

Connect to the syringe to the female Luer lock connector in the standing vial.

4a **4b**
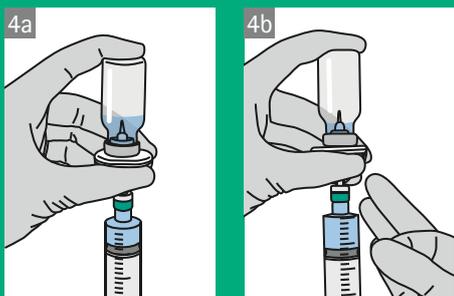
a) Flip the vial over and withdraw the solution.
b) To remove air from the syringe, withdraw half of the total desired quantity and flick the side of the filled syringe. Press the plunger on the syringe to expel the air from the syringe, and then withdraw the rest of the solution.

5a **5b**
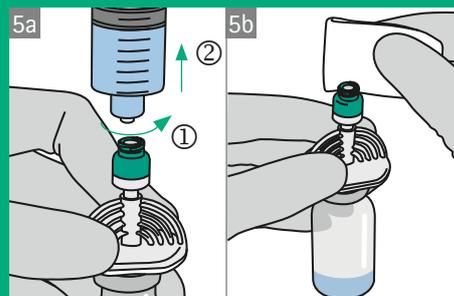
a) Disconnect the syringe from the female Luer lock connector on the upright vial.
b) Disinfect the female Luer lock connector with a moistened disinfection cloth or the SwabCap® disinfection cap.

Injection accessories

Injection accessories

Single-use cannulae

Sterican® standard cannulae

Single-use cannula with 3-faceted cut reduces puncture pain with indication-appropriate cut length

- Thin-walled cannula made of rust-free chromium-nickel steel
- Smooth surface, finely dosed silicone coating
- Specially faceted long cut
- Transparent polypropylene Luer lock connection
- 100 pc. package
- Individually packaged sterile
- Luer lock connector color coding pursuant to ISO 6009

Size [Pravaz]	Gauge x length	Diameter x length	Sales unit	Art. no.
20	■ 27G x ³/4"	0.40 x 20 mm	1 pack	4657705
18	■ 26G x 1"	0.45 x 25 mm	1 pack	4657683
17	■ 24G x 1"	0.55 x 25 mm	1 pack	4657675
16	■ 23G x 1"	0.60 x 25 mm	1 pack	4657667
14	■ 23G x 1¹/4"	0.60 x 30 mm	1 pack	4657640
12	■ 22G x 1¹/4"	0.70 x 30 mm	1 pack	4657624
2	■ 21G x 1¹/2"	0.80 x 40 mm	1 pack	4657527
1	■ 20G x 1¹/2"	0.90 x 40 mm	1 pack	4657519

Sterican® Insulin cannulae

Single-use, sterile cannulae for insulin injection

- Long cut
- Rust-free chromium-nickel steel cannula tube
- Smooth surface, finely dosed silicone coating
- Transparent polypropylene Luer lock connection
- Latex-, PVC- and DEHP-free
- Used with Injekt® and Omnifix® insulin syringes
- 100 pc. package

Gauge x length	Diameter x length	Sales unit	Art. no.
■ 26G x ¹/2"	0.45 x 12 mm	1 pack	4665457
■ 27G x ¹/2"	0.4 x 12 mm	1 pack	4665406
■ 30G x ¹/2"	0.3 x 12 mm	1 pack	4656300

Sterican® Heparin, Tuberculin

Single-use cannula for special indications

- Long cut
- Thin-walled cannula made of rust-free chromium-nickel steel
- Smooth surface, finely dosed silicone coating
- Specially faceted long cut
- Transparent polypropylene Luer lock connection
- 100 pc. package
- Individually packaged sterile
- Luer lock connector color coding pursuant to ISO 6009

Gauge x length	Diameter x length	Sales unit	Art. no.
■ 25G x $^5/_8$"	0.5 x 16 mm	1 pack	4657853

Sterican® – short cut

Single-use cannula for special indications

- Thin-walled cannula made of rust-free chromium-nickel steel
- Smooth surface, finely dosed silicone coating
- Specially faceted short cut
- Transparent polypropylene Luer lock connection
- 100 pc. package
- Individually packaged sterile
- Luer lock connector color coding pursuant to ISO 6009

Gauge x length	Diameter x length	Sales unit	Art. no.
■ 18G x 1$^1/_2$"	1.2 x 40 mm	1 pack	4665120

Injection accessories

Single-use cannulae

Sterican® for dental anesthesia

Single-use cannulae for special indications

- Long cut
- Thin-walled cannula made of rust-free chromium-nickel steel
- Smooth surface, finely dosed silicone coating
- Specially faceted long cut
- Transparent polypropylene Luer lock connection
- 100 pc. package
- Individually packaged sterile
- Luer lock connector color coding pursuant to ISO 6009

Gauge x length	Diameter x length	Sales unit	Art. no.
■ 25G x 1"	0.5 x 25 mm	1 pack	9186158
■ 25G x 1^1/$_2$"	0.5 x 40 mm	1 pack	9186166
■ 27G x 1^1/$_2$"	0.4 x 40 mm	1 pack	9186182
■ 27G x 1"	0.4 x 25 mm	1 pack	9186174

Injekt® Solo

2-piece single-use syringe

- Graduated in mL for volume dosage measurement; scale extended beyond nominal volume
- Highly transparent cylinder with green plunger and black graduation marks for good readability, smudge-proof
- Secure plunger stopper makes it easy to withdraw up to the maximum volume
- Silicon oil free
- Luer connector for attaching needle - centric or eccentric
- Luer lock cone, centric
- Latex- and PVC-free
- 100 pc. package
- Individually packaged sterile

Height	Taper	Scale	Sales unit	Art. no.
With Luer connection				
2 mL	Centric	0.1 mL	1 pack	4606027V
5 mL	Eccentric	0.2 mL	1 pack	4606051V
10 mL	Eccentric	0.5 mL	1 pack	4606108V
20 mL	Eccentric	1.0 mL	1 pack	4606205V

Omnifix® Solo

3-piece single-use syringe

- Material: Polypropylene; plunger stopper: synthetic rubber
- Plunger stopper with easy-access double sealing ring to allow slow withdrawal and injection of very small quantities
- Highly transparent cylinder with black graduation marks (in mL) for good readability, smudge-proof
- Secure plunger stopper makes it easy to withdraw up to the maximum volume
- Silicone coating inside
- Luer connector for attaching needle - centric or eccentric
- Luer lock cone, centric
- Latex- and PVC-free
- 100 pc. package
- Individually packaged sterile

Height	Taper	Scale	Sales unit	Art. no.
With Luer lock connector (also suitable for use in syringe pumps)				
1 mL	Centric	0.01 mL	1 pack	9167006V
3 mL	Centric	0.1 mL	1 pack	4617022V
5 mL	Centric	0.2 mL	1 pack	4617053V
10 mL	Centric	0.5 mL	1 pack	4617100V
20 mL	Centric	1.0 mL	1 pack	4617207V
30 mL	Centric	1.0 mL	1 pack	4617304F
50 mL	Centric	1.0 mL	1 pack	4617509F

Omnifix®-F

Fine-dosage syringes, 1 mL, 3-piece, e.g., for tuberculin / heparin / allergy tests

- Volume: 1 mL, scale value 0.01 mL
- Plunger stopper with easy-access double sealing ring to allow slow withdrawal and injection of very small quantities
- Highly transparent cylinder with black graduation marks for good readability, smudge-proof, inner silicone coating
- Secure plunger stopper makes it easy to withdraw up to the maximum volume
- Luer connector, centric
- Latex- and PVC-free
- 100 pc. package
- Individually packaged sterile

Height	Taper	Scale	Sales unit	Art. no.
1 mL	Centric	0.01 mL	1 pack	9161406V

Injection accessories

Single-use cannulae

Omnifix®-F Duo

3-piece fine-dosage syringes, 1 mL, with included Sterican® cannula

- Volume: 1 mL, scale value 0.01 mL
- Plunger stopper with easy-access double sealing ring to allow slow withdrawal and injection of very small quantities
- Highly transparent cylinder with black graduation marks for good readability, smudge-proof, inner silicone coating
- Secure plunger stopper makes it easy to withdraw up to the maximum volume
- Luer connector, centric
- Latex- and PVC-free
- 100 pc. package
- Individually packaged sterile

Gauge	Diameter	Length		Sales unit	Art. no.
25G	0.5 mm	16 mm	1 pack = 100 pc	1 pack	9161465V

Injekt®-F

Fine-dosage syringes, 1 mL, 2-piece, e.g., for tuberculin / heparin / allergy tests

- Volume: 1 mL, scale value 0.01 mL
- Highly transparent cylinder with green plunger and black graduation marks for good readability, smudge-proof
- Secure plunger stopper makes it easy to withdraw up to the maximum volume
- With saver spike: no head space, no loss of medication
- Silicon oil free
- Luer connector, centric
- Latex- and PVC-free
- 100 pc. package
- Individually packaged sterile

Height	Taper	Scale		Sales unit	Art. no.
1 mL	Centric	0.01 mL		1 pack	9166017V

Injekt®-F Duo

2-piece fine-dosage syringes, 1 mL, with included Sterican® cannula

- Volume: 1 mL, scale value 0.01 mL
- Highly transparent cylinder with green plunger and black graduation marks for good readability, smudge-proof
- Secure plunger stopper makes it easy to withdraw up to the maximum volume
- With saver spike: no head space, no loss of medication
- Silicon oil free
- Luer connector, centric
- Latex- and PVC-free
- 100 pc. package
- Individually packaged sterile

Gauge	Diameter	Length		Sales unit	Art. no.
25G	0.5 mm	16 mm	1 pack = 100 pc	1 pack	9166033V

Injection accessories

Single-use cannulae
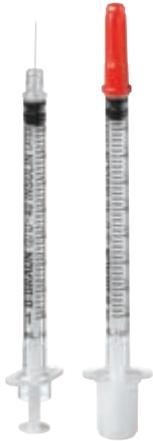
Omnican® Insulin syringes

For U-40 insulin

- Single-use syringe with integrated cannula for subcutaneous insulin injection
- 3-faceted cut reduces puncture pain
- Highly transparent cylinder
- Reduced loss of insulin thanks to integrated cannula
- Latex-free
- Secure plunger stopper
- 30 G

Type	Diameter x length	Volume	Scale distribution	Sales unit	Art. no.
Omnican® 20	0.30 x 8 mm	0.5 mL / 20 I.U.	0.5 I.U.	100 pcs	9161619S
Omnican® 40	0.30 x 12 mm	1.0 mL / 40 I.U.	1 I.U.	100 pcs	9161627S

The protective caps at the ends of the syringes ensure sterility. All variants of Omnican® insulin syringes are latex-free.

Omnican® Insulin syringes

For U-100 insulin

- Single-use syringe with integrated cannula for subcutaneous insulin injection
- 3-faceted cut reduces puncture pain
- Highly transparent cylinder
- Reduced loss of insulin thanks to integrated cannula
- Latex-free
- Secure plunger stopper
- 30 G

Type	Diameter x length	Volume	Scale distribution	Sales unit	Art. no.
Omnican® 50	0.30 x 12 mm	0.5 mL / 50 I.U.	1 I.U.	100 pcs	9151125S

Omnifix® Solo 50 mL

3-piece wound and blister syringe

- Made of polypropylene
- Highly transparent cylinder
- High-contrast blue graduation
  - Smudge-proof
  - Good readability
  - Graduated in mL for volume dosage measurement
- With centric catheter connection
- Secure plunger stopper
- Easy-access plunger stopper with double sealing ring
- Latex- and PVC-free

Height	Scale	Sales unit	Art. no.
Without adapter			
50 mL	1.0 mL	100 pcs	4613503F

SOL-M 100 mL syringe with catheter connector

3-piece wound and blister syringe

- Made of polypropylene
- Highly transparent cylinder
- High-contrast blue graduation
  - Smudge-proof
  - Good readability
  - Graduated in mL for volume dosage measurement
- With centric catheter connection
- With Luer adapter, to be removed from the plunger
- Secure plunger stopper
- Easy-access plunger stopper with double sealing ring
- Latex- and PVC-free

Height	Scale	Sales unit	Art. no.
100 mL	2.0 mL	30 pcs	180100CT

Intelligent, automatic infusion therapy

By professionals – for professionals

We have been developing and producing infusion pumps since 1951.

Art. no.	Product	Dimensions (mm) W | H | D	Weight (kg)	Delivery range (mL/h)	Bolus rate (mL/h)	Battery capacity (for new units)	Functional spectrum					Safety system				
							Medication database	Pressure sensor	Automatic delivery rate calculation	Dosage calculation	Standby mode	Free-flow barrier	Bolus reduction system	Data lock	Water-tight IPX4	Color display
8713050	Infusomat® Space S	214 | 68 | 124	~ 1.4	0.01–1200.0	up to 1200	4 h at 100 mL/h	✓	✓	✓	✓	✓	✓	✓	✓	–	–
8713070	Infusomat® Space P	214 | 68 | 124	~ 1.4	0.01–1200.0	up to 1200	4 h at 100 mL/h	✓	✓	✓	✓	✓	✓	✓	✓	–	–
8713030	Perfusor® Space	249 | 68 | 152	~ 1.4	0.01–999.9	up to 1800	8 h at 25 mL/h	✓	✓	✓	✓	✓	✓	✓	✓	–	–
8717050	Infusomat® compact plus	229 | 98 | 220	~ 1.9	0.01–1200.0	up to 1200	9 h at 100 mL/h	✓	✓	✓	✓	✓	✓	–	–	✓	✓
8717030	Perfusor® compact plus	290 | 98 | 220	~ 2.3	0.01–999.9	up to 1800	8 h at 5 mL/h	✓	✓	✓	✓	✓	–	–	–	✓	✓

Art. no.	Product	Dimensions (mm) W | H | D	Weight (kg)	Delivery range (mL/h)	Bolus rate (mL/h)	Battery capacity (for new units)	Functional spectrum					Safety system				
							Medication database	Pressure sensor	Automatic delivery rate calculation	Dosage calculation	Standby mode	Free-flow barrier	Bolus reduction system	Data lock	Water-tight IPX4	Color display
8719030	**Space^plus Perfusor®**	approx. 255 mm x 70 mm x 170 mm approx. 399 mm x 70 mm x 170 mm with fully extended drive	~ 1.9	0.01–1800	1–1800	Approx. 11 h @ 25 mL/h with 50 mL syringe @ 22°C Wi-Fi activated; approx. 13 h @ 25 mL/h @ 22°C with Wi-Fi disabled	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8719050	**Space^plus Infusomat®**	~ 215 | 70 | 170	~ 1.9	0.1–1200	1–1200	Approx. 8 h @ 100 mL/h @ 22°C Wi-Fi activated; approx. 13 h @ 100 mL/h @ 22°C with Wi-Fi disabled	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Perfusor® Space

Syringe pumps for application of liquids in infusion therapy

- Very good delivery accuracy; universal applicability
- Fully automatic driving system, easy to use during syringe replacements
- Use all common sizes of syringes (2 to 50/60 mL syringes) with a single pump
- Integrated safety functions
- Intuitive user controls
- Dosage rate calculation, initial bolus function, medication database
- Automatically calculates delivery rate when volume and time limits are specified
- Fulfills requirements given in Standards EN 1789 and 13718-1 for use in emergency medical services
- Multiple therapy options in a single system (e.g., TCI and PCA)

Please also note our Perfusor® Space accessories.

Sales unit	Art. no.
1 pc	8713030

Intelligent, automatic infusion therapy

By professionals – for professionals

Infusomat® Space

Volumetric infusion pump for application of fluids in infusion therapy, for use with Original Infusomat® Space lines

- Suitable for mobile or stationary use
- Attractive design, compact size, low weight
- Intuitive controls
- For use with Infusomat® Space lines and Infusomat® Space SafeSet lines
- Integrated safety functions
- Automatically calculates delivery rate when volume and time limits are specified
- Fulfills requirements given in Standards EN 1789 and 13718-1 for use in emergency medical services
- Multiple therapy options in a single system (e.g., piggyback and PCA)

Please also note our Infusomat® Space accessories.

	Sales unit	Art. no.
	1 pc	8713050

Infusomat® Space P

Space-generation volumetric infusion pump for infusion therapy with Intrafix® gravity line

- Attractive design, compact size, low weight
- Easy operation, guided navigation, clear display of all relevant parameters
- Sophisticated safety features
- Compatible with Intrafix gravity lines®
- With integrable drug library
- Numerous configurable therapy settings
- Can be used as a single pump, in a performance package with up to 3 Space pumps, or within the Space System
- Network capability

	Sales unit	Art. no.
	1 pc	8713070

Space^plus. More power. More free space.

For flexibility in use

DoseGuard™ –
The safer, the better
DoseGuard™ reduces the risk of medication errors using individually definable limit values.
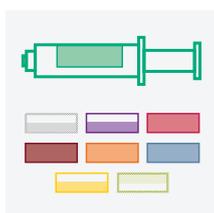
Color coding
Space^plus offers various customizable color codes for medications. For safety at first glance.
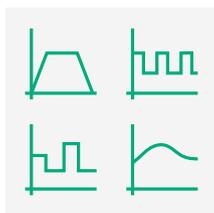
Different therapy modes
Space^plus offers different therapy modes specific to infusion, pain, and nutrition therapy.

Space^plus DrugLibrary Manager
For central drug database management and configuration. Adaptable to all wards and patient-specific needs.
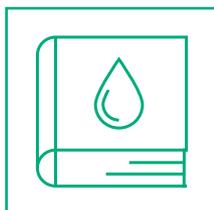
Variety a step ahead.

Space^plus covers a wide range of therapies.

Therapy modes reduce the workload of medical staff and enable better standardization of therapies, accounting for cut-offs and reducing medication errors.

The system allows for continuous, uninterrupted therapy, including during intra-hospital transport or during MRI scans (if required, corresponding accessories).

Wide range of treatment options
With corresponding disposables

For flexibility in use

Safeset – Airstop
Unique filter membrane at the bottom of the drip chamber prevents air from the I.V. container from entering the connection line – for fewer disconnections.
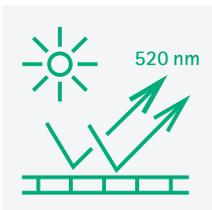
Light protection
Increased safety thanks to photo-protection products.
Air bubbles and particles can still be detected.

520 nm

NRFit®
Better safety in regional anesthesia prevents improper connections between neuraxial and intravenous applications. Corresponding color coding and connector design.

NRFit®

ENFit™
Better safety in enteral nutrition prevents misconnections. Corresponding color coding and connector design.
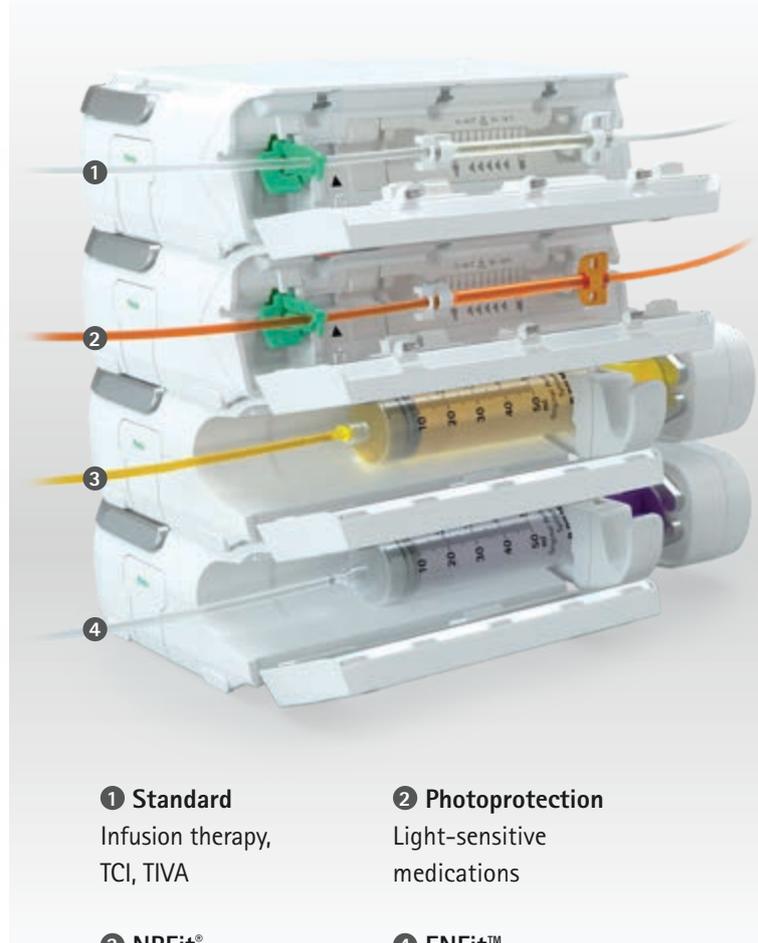
ENFit®

❶ **Standard**
Infusion therapy, TCI, TIVA

❷ **Photoprotection**
Light-sensitive medications

❸ **NRFit®**
Pain therapy

❹ **ENFit™**
Nutritional therapy

Specific therapies, specific disposables.

Our disposables cover the full range of therapeutic options, e.g., standard, light-blocking, transfusion, pain and antibiotic therapies; closed systems for oncology; and disposables for enteral nutrition.

Our original Perfusor® syringes are 3-piece disposable syringes with very good gliding properties to ensure precise delivery rate characteristics in combination with the Space^plus Perfusor®.

Our color-coded Original Perfusor Lines help you identify highly potent medications more quickly, further reducing the risk of medication errors.

A connected system.

B|BRAUN
Health Cloud

Connection to B. Braun Health Cloud provides access to fully automatic software updates and upgrades, and more product information.

OnlineSuite plus
powered by B. Braun Health Cloud

OnlineSuite plus is the innovative IT platform with software applications that help users improve safety, efficiency and therapy implementation throughout the entire clinic.
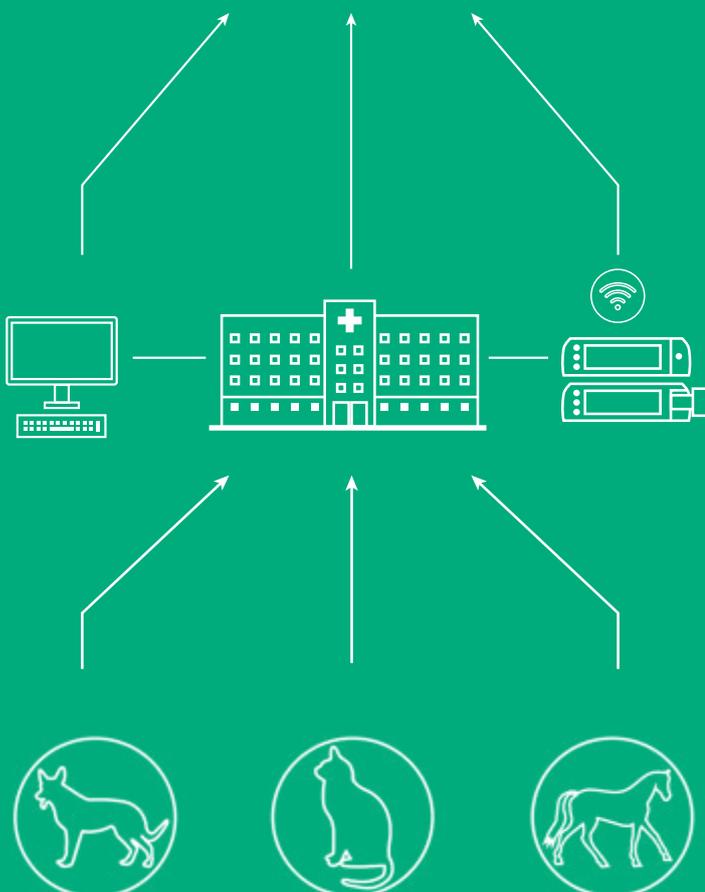
Space plus infusion pumps feature an integrated WLAN module, so they can always be connected to the hospital's IT network.

All infusion pumps provide flexibility: they can be used in wards, as individual pumps, or during transport.

Space^{plus}

More power. More free space.

Space^{plus} Infusomat® and Perfusor®

The Space^{plus} Infusomat® infusion pump offers state-of-the-art technology for high-precision infusions in combination with our Infusomat® Space lines for intravenous, epidural, parenteral and enteral applications.

- +/- 3% delivery accuracy when using Infusomat® Space lines
- Doubly effective freeflow protection thanks to anti-freeflow clamps on both the device and the line
- IP44 moisture protection: Protection against splashing water from all directions
- Large color touch display: High-resolution screen readable from all angles to ensure ease of operation - including, of course, with wet/damp gloves
- Can be used as a stand-alone device with built-in Wi-Fi, power supply, and mounting clamp, or in a Space^{Plus} Station
- Remote software and drug library update/upgrade options without affecting clinical workflows
- Comprehensive portfolio of Infusomat® Space lines for the greatest possible variety of therapies: Infusion therapy, pain therapy, nutritional therapy, blood transfusion, enteral nutrition, epidural application, light protection, cytostatic therapy
- Space^{plus} integrates modern IT cybersecurity and technologies to protect the entire Space^{plus} system
- Data communication to PDMS via HL7 interface, Ethernet and Wi-Fi
- Connect individual pumps via Wi-Fi, station locations via Space^{Plus} data module
- Drug Library Manager enables customized drug databases with patient profiles, customizable drugs, color codes, and dose limits

Type	Art. no.
Space^{plus} Infusomat®	8719050
Space^{plus} Perfusor®	8719030
Space^{plus} pump clamp	8719165

compact plus

A step ahead

Infusomat® compactplus

Volumetric infusion pump for application of fluids in infusion therapy,
for use with Original Infusomat® Compact plus lines

- Compact, robust design
- Intuitive operation, simple menu navigation, large color display
- Built-in carrying handle and power supply
- Integrable drug library
- Large portfolio of Infusomat® plus lines to support different therapies
- Can be used as a single pump, in a performance package with up to 3 compact plus
  pumps or in a compact plus system

Type	Art. no.
Infusomat® compact plus	8717050

Perfusor® compact plus

Syringe pumps for application of liquids in infusion therapy

The Perfusor® compact plus syringe pump is a modern and simple pump
for infusion therapy.

- Compact, robust design
- Intuitive operation, simple menu navigation, large color display
- Semi-automatic drive
- Built-in carrying handle and power supply
- Integrable drug library
- Compatible with different syringe types and sizes
- Can be used as a single pump, in the performance package with up to 3 compact plus
  pumps or in the compact plus system

Type	Art. no.
Perfusor® compact plus	8717030

Infusomat® Space line

Practical tips / handling information
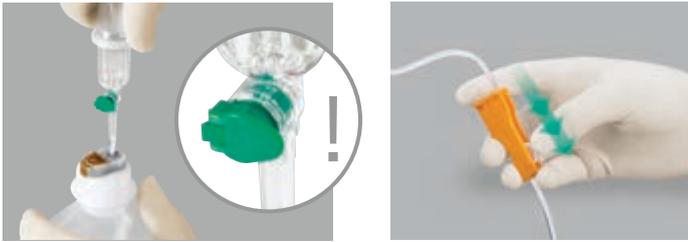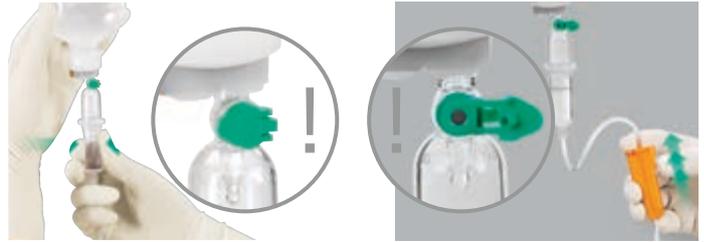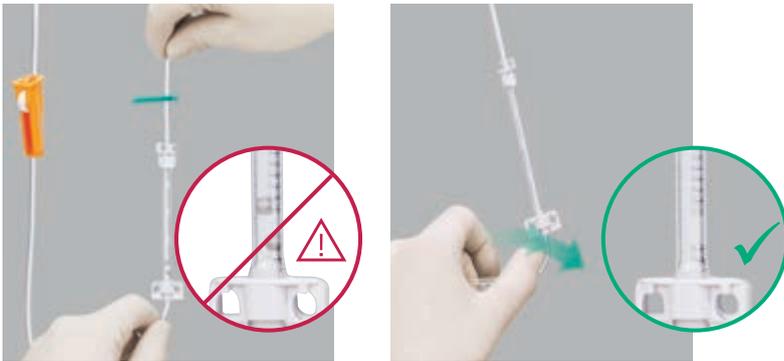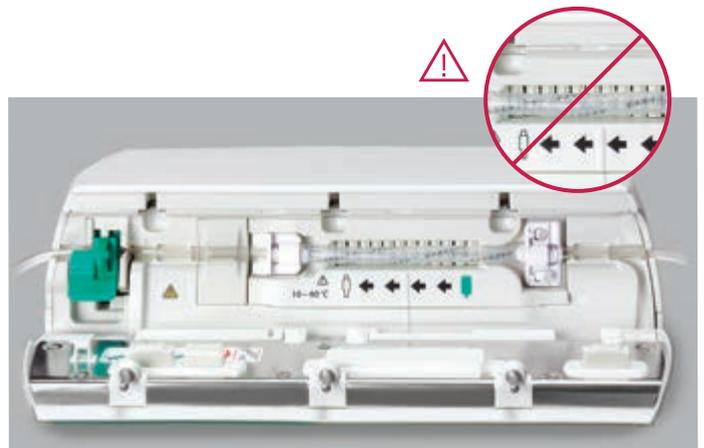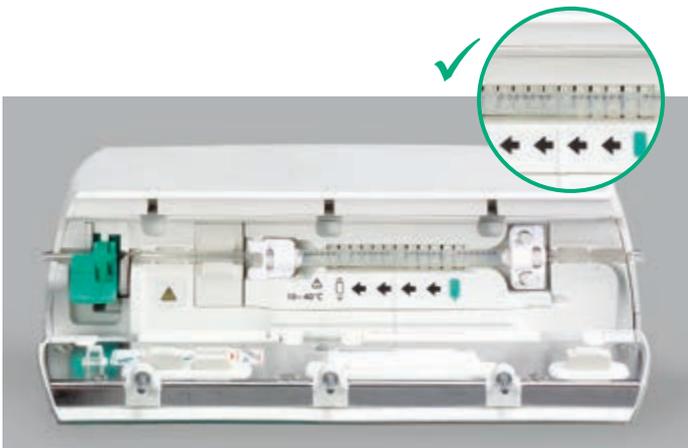
Infusion and transfusion devices

Infusion sets

Intrafix® Primeline

Standard infusion devices for pressure and gravity infusions

- Sharp piercing spike makes even hanging containers easy to pierce
- Bacteria-proof aeration with cover flap
- Convenient drip chamber design with highly transparent viewing glass and flexible pump chamber to allow fast, easy adjustment of fluid levels
- 15 µm filter in the drip chamber to protect against large particles
- Pressure resistance: up to 2 bar
- Suitable for use with infusion pumps that are designed for 3 x 4.1 mm tubes
- Luer Lock connector
- Latex- and DEHP-free, Neutrapur: PVC-free

Type/Tube length	Sales unit	Art. no.
150 cm	100 pcs	4062955
Standard, 180 cm	100 pcs	4062981L
Standard, 230 cm	100 pcs	4060407
B.C.V., 180 cm, with check valve	100 pcs	4063287
I. S., 180 cm, with needle-based injection valve	100 pcs	4062182
Intrafix® Primeline, Y-Caresite®, needle-free injection valve	100 pcs	4062158C
UV-protect, orange-transparent, 180 cm, PVC free*	100 pcs	0086774R
3-W.S.C., 180 + 15 cm, three-way Discofix® stopcock	100 pcs	4180119
PrimeStop, 180 cm, with terminal PrimeStop protective cap	100 pcs	4062982L

Infusion and transfusion devices

Infusion sets

Intrafix® SafeSet

Special infusion devices with aeration for pressure and gravity infusions

- Protection against air infusions (AirStop) and automatic de-airing of the line without loss of fluids (PrimeStop)
- AirStop: Filter membrane that acts as a barrier, preventing air from getting into the connection line
- PrimeStop: Protective cap with integrated liquid-repellent membrane helps to prevent infusion solution from leaking out
- Sharp piercing spike makes even hanging containers easy to pierce
- Bacteria-proof aeration with cover flap
- Convenient drip chamber design with highly transparent viewing glass and flexible pump chamber to allow fast, easy adjustment of fluid levels
- 15 µm filter in the drip chamber to protect against large particles
- Pressure resistant up to 2 bar; suitable for use with infusion pumps that are designed for 3 x 4.1 mm tubes
- Luer Lock connector
- Latex- and DEHP-free, Neutrapur: PVC-free

Intrafix® SafeSet – explained in brief.
Click here for the YouTube video

www.bbraun.info/iisw

Type/Tube length	Sales unit	Art. no.
Standard, 180 cm	100 pcs	4063000
B.C.V., 180 cm, with check valve	100 pcs	4063001
Standard, 230 cm	100 pcs	4063003
Intrafix® Primeline, Y-Caresite®, needle-free injection valve	100 pcs	4063004C
3-W.S.C., 200 + 20 cm, with Discofix® C three-way stopcock	100 pcs	4063006
UV-protect, orange-transparent, 180 cm, PVC free*	100 pcs	4063131

* Use only with pressure cuffs, not with pressure-infusion devices

**Do you have trouble with air in your infusion lines? –
The AirStop membrane makes that a thing of the past!**

Air Stop

Strong air-separation filter

The filter membrane in the bottom of
the drip chamber acts as a barrier.
After the container has emptied out,
it maintains a constant level of fluid in
order to prevent air or large particles
from getting in.

Prime Stop

PrimeStop protective cap

Allows automatic filling of the line
and saves valuable working time
by making it possible to prepare
multiple infusions simultaneously.
Thanks to the PrimeStop membrane,
the Intrafix® SafeSet remains a
closed system until the moment it
is connected to the venous port.

Benefits to you
- Protects against air getting into the infusion line* and reduces the risk of infection
- Compatible solutions are easy to reconnect, saving time and money
- Significantly simplifies the work process by reducing loss of solution when de-airing

* Please note general safety instructions. Functional deviations as per the current state of technology
 can never be completely ruled out with mass-produced products.

B. Braun infusion sets

At a glance

Products	Product description	Art. no.	PZN (pharma-ceutical regis-tration number)	Protection against air getting into the infusion line when container is completely empty	Easy, reliable aeration with no risk of fluid leakage	Easy reconnection of the same solution (multiple infusions)	Infusion set for infusions with pressure cuff (emergency)
Intrafix® SafeSet	**Standard, 180 cm**	**4063000**	**01900697**	●	●	●	❶
	with check valve, 180 cm	4063001	03688853	●	●	●	❶
	PVC-free (Neutrapur), 180 cm	4063002	03688913	●	●	●	❶
	Standard, 230 cm	4063003	05548932	●	●	●	❶
	UV-protect, orange-transparent, 180 cm	4063131	10788957	●	●	●	●
	with Discofix® C three-way stopcock, 220 cm	4063006	06934821	●	●	●	❶
Intrafix® Air P	**Standard, 150 cm**	**4062955**	**07666297**	●	●	❷	❶
Intrafix® Primeline	**Standard, 180 cm**	4062981L.	00426779	●	●	❷	❶
	Standard, 230 cm	4060407	02559898	●	●	❷	❶
	with check valve, 180 cm	4063287	00412895	●	●	❷	❶
	PVC-free (Neutrapur), 180 cm	4062191	00183182	●	●	❷	❶
	UV-protect, black, 230 cm	4060563	06411170	●	●	❷	●
	UV-protect, orange-transparent, with Spin-Lock® connector*, 180 cm	0086774R.	10788963	●	●	❷	●
	with Discofix® three-way stopcock, 195 cm	4180119	06107650	●	●	❷	❶
	with terminal PrimeStop protective cap, 180 cm	4062982L.	04187840	●	●	❷	❶
	with terminal Spin-Lock® connector*, 180 cm	4064007	11535129	●	●	❷	❶
	Type: I.S. with injection valve, needle-based, 180 cm	4062182	06411193	●	●	❷	❶

Basic requirements

Easy application of the infusion in very little time	Easy application of 10% oil solutions or highly viscous solutions	Special requirements					PVC-/DEHP-free	
		Easy injection without cannula (eliminates the risk of needle-stick injuries)	Pharmaceutical-resistant injection option for injections	Improved mobility	Application of photoprotected medications	Suitable for parallel infusions	PVC-free	DEHP-free
④	🔴	⚫	⚫	⚫	⚫	⚫		○
④	🔴	⚫	⚫	⚫	⚫	🟢		○
④	🔴	⚫	⚫	⚫	⚫	⚫	●	○
④	🔴	⚫	⚫	🟢	⚫	⚫		○
④	🔴	⚫	⚫	⚫	🟢	⚫	●	○
④	🔴	🟢	🟢	🟢	⚫	③		○
④	🟢	⚫	⚫	⚫	⚫	⚫		○
④	🟢	⚫	⚫	⚫	⚫	⚫		○
④	🟢	⚫	⚫	🟢		⚫		○
④	🟢	⚫	⚫	⚫	⚫	🟢		○
④	🟢	⚫	⚫	⚫	⚫	⚫	●	○
④	🟢	⚫	⚫	🟢	🟢	⚫		○
④	🟢	⚫	⚫	⚫	🟢	⚫	●	○
④	🟢	🟢	⚫	🟢	⚫	③		○
④	🟢	⚫	⚫	⚫	⚫	⚫		○
④	🟢	⚫	⚫	⚫	⚫	⚫		○
④	🟢	⚫	🟢	⚫	⚫			○

🔴 not recommended   🟢 suitable   🟢 very suitable   ⚫ not fulfilled

1 Observe the usual safety measures
2 Caution: Air can get into the infusion set when replacing the bottle
3 With pump-controlled parallel infusions, the gravity line must be secured with a check valve
4 Pursuant to ISO 8536-4, infusion devices must allow a flow rate of at least 1000 mL of a 0.9% NaCl solution within 10 minutes at a static pressure of 1 mWS (Intrafix® SafeSet flow rate: 126 mL/min.; Intrafix® Air P/Primeline: 205.8 mL/min.)

* The Spin-Lock® connector is a rotating Luer lock connector that reduces the risk of the line twisting, thus reducing the risk of irritation at the venous port site. If needed, the connector can be used like a Luer slip connector.

● PVC-free   ○ DEHP-free

These recommendations do not constitute professional advice or instructions regarding products sold by B. Braun. Please contact B. Braun directly if you have any specialized questions about our products. Although we make every effort to provide precise, up-to-date information, B. Braun cannot be held liable for any damage or injury occurring in connection with this information. As such, we neither explicitly or implicitly offer any guarantees or warranties in this context, and make no assurances as regards the accuracy or completeness of the information provided or obtained.

Infusion line for Infusomat® Space

PHT DEHP
DEHP-free

	SafeSet / BasicSet									
B. Braun Code SafeSet Basic set	**8701148SP** 8270358SP **8700036SP** 8270350SP	8701149SP 8250731SP	8700087SP	8700130SP	8700118SP 8700110SP	8250718SP 8250710SP Piggy Back	8270066SP Transfusion	8700128SP 8700127SP	8250438SP 8250437SP	8250832SP 8250834SP Enteral ENFit™
Units per box (pc)	100	100	100	100	100	25	100	100	100	40/25
PVC-free (Neutrapur)	✗	✓	✗	✗	✓	✓	✗	✓	✓	✓
Spike with bacteria-proof de-airing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Filter in drip chamber (µm)	15 µm	15 µm	15 µm	15 µm	15 µm	15 µm	200 µm	15 µm	15 µm	–
Total length/patient End (cm)	**250/145 cm** 300/200 cm	250/ 145 cm	270/ 165 cm	300/ 200 cm	300/ 200 cm	300/ 200 cm	250/ 145 cm	250/ 145 cm	250/ 145 cm	310/ 210 cm
Check valve	✗	✗	✗	✗	✗	✓	✗	✗	✗	✗
Priming volume (mL)	**24.5 mL** 28 mL	24.5 mL	18 mL	20 mL	29 mL	29 mL	24.5 mL	24.5 mL	24.5 mL	30 mL
Needle-free port(s) downstream	✗	✗	1 x IP	x 1	x 1	x 1	✗	✗	x 1	✗
Transparent Light protection (520 nm)	✗	✗	✗	✗	✗	✗	✗	✓	✓	✗

Name	Sales unit	Art. no.
Infusomat® Space Type Airstop	100 pcs	8701148SP
Infusomat® Space LTG, Safeset, PVC 300 cm	100 pcs	8270358SP
Infusomat® Space LTG, Stand, PVC 250 cm	100 pcs	8700036SP
Infusomat® Space LTG, Stand, PVC 300 cm	100 pcs	8270350SP
Infusomat® Space Safeset, Pur 250 cm	100 pcs	8701149SP
Infusomat® Space LTG, Eurofiy Y-Port, PVC 270 cm	100 pcs	8700087SP
Infusomat® Space Safeset, CS-Y-Port, PVC 300 cm	100 pcs	8700130SP
Infusomat® Space Safeset, Y-Port, Pur 300 cm	100 pcs	8700118SP
Infusomat® Space LTG, Y-Port, Safeflow, Pur 300 cm	100 pcs	8700110SP
Infusomat® Space LTG, Piggyb, Y-Port, Pur 300 cm	100 pcs	8250710SP
Infusomat® Space LTG, Transf., PVC 250 cm	100 pcs	8270066SP
Infusomat® Space Safeset, UV-Prot, Pur 250 cm	100 pcs	8700128SP
Infusomat® LTG, Transp, UV-Prot, Pur 250 cm	100 pcs	8700127SP
Infusomat® LTG, Safeset, UV-Prot, Y-Port 250 cm	100 pcs	8250438SP
Infusomat® LTG, Y-Port, UV-Prot, Pur 250 cm	100 pcs	8250437SP
Infusomat® LTG.EN Multikon ENFit™ Pur 320 cm	40 pcs	8250832SP
Infusomat® LTG.EN Spike ENFit™, PVC 320 cm	25 pcs	8250834SP

Infusion line for Infusomat® Compact Plus

Infusomat® Plus Line
For Infusomat® compact plus

Type PVC		Est. length | from pump outlet		Sales unit	Art. no.
Standard		240 | 150 cm	◉●	100 pcs	8700310
SafeSet	AirStop membrane	240 | 150 cm	●	100 pcs	8700200
UV protect	Orange-Transparent	240 | 150 cm	○●	100 pcs	8700260
Transfusion	200 µm transfusion filter	240 | 150 cm	●	100 pcs	8700350

Infusomat® plus line, ENFit™
Enteral nutrition with ENFit™

Name	Sales unit	Art. no.
Infusomat® plus Line, ENFit™, universal adapter, Neutrapur, 330 cm	40 pcs	8700370
Infusomat® plus Line, ENFit™, with ENPlus Spike, PVC, 330 cm	25 pcs	8700400

The path to correct infusion therapy

- 40–60 mL/kg/d maintenance requirement

- Deficit in mL = % dehydration x kg body weight x 10

- Shock bolus of different solutions:

  - 10–20 mL/kg isotonic crystalloid solution in 10–15 min

  - 4 mL/kg hypertonic solution

  - 2.5 – 5 mL/kg synthetic gelatin

Fluid therapy must be tailored to the individual patient. The indication should be continually re-evaluated and the therapy adjusted.
The choice of infusion solution, volume, drip rate and composition depends on the indication and the needs of the patient.
A distinction is made between stabilization, rehydration, and maintenance.*

Stabilization phase

- Goal: Normovolemia
- Dosage rate:
  - 1st bolus: 10–20 mL/kg dog and 5–10 mL/kg cat in 15 min
    (cats with hypothermia – reduce fluid substitution) circulatory re-evaluation and, if necessary,
  - 2nd bolus: 10 mL/kg in 15 min and subsequent re-evaluation; if necessary, 2nd bolus.
    Total shock dose should not be exceeded (80 mL/kg dog; 65 mL/kg cat). If serum protein under 45 g/l, an additional bolus can be considered, e.g. Gelafundin®, 2.5 mL/kg (cat) or 5 mL/kg (dog) in 15 minutes; in cases of severe shock, one-time administration of hypertonic solutions (4 mL/kg) may also be useful. With acute bleeding and/or Hct <20%, hemoglobin should be substituted in the form of whole blood or red blood cell concentrate.

Rehydration

- 1. Deficit in mL = % dehydration x kg body weight x 10
- 2. Maintenance requirement 40–60 mL/kg/day
- 3. Estimated persistent losses (e.g. vomiting or diarrhea) in mL
= Total infusion volume in mL for the first 24 hours

Maintenance

- Fluid requirements are estimated based on approximations of metabolic energy requirements.
  One milliliter of water is needed to metabolize 1 kcal of energy. Therefore, the metabolic fluid requirement can be calculated using the formula 70 x (current body weight in kilograms) $^{(kg)}$ 0.75 = mL water/day (simplified to 40–60 mL/kg/d)

* The calculation is based on the references below and must be adapted to patient-specific factors.
As such, B. Braun Vet Care GmbH assumes no liability for usage based on this calculation.

References
(1) Davis H., Jensen T., Johnson A. 2013 AAHA/AAFP fluid therapy guidelines for dog and cat. J Am Anim Hosp Assoc. 2013;49(3):149–159.
(2) Tello L, Perez-Freytes R. Fluid and Electrolyte Therapy During Vomiting and Diarrhea. Vet Clin North Am Small Anim Pract. 2017;47(2):505-519.
(3) DiBartola S.P. 3rd edition. Elsiever; St Louis (MO): 2006. Fluid, electrolyte and acid-base disorders in small animal practice.
(4) Buck RK, Bester L, Boustead KJ, Kadwa AR, Zeiler GE. Blood acid-base, haematological and haemostatic effects of hydroxyethyl starch (130/0.4) compared to succinylated gelatin colloid infusions in normovolaemic dogs. J S Afr Vet Assoc. 2020;91(0):e1-e9. Published 2020 Jun 4. doi:10.4102/jsava.v91i0.1990.

Setting the correct infusion rate

The table below is designed as an orientation guideline for setting the rate of a gravity infusion. To set and adjust the rate, count the drops. Fluctuations in rate are common with gravity infusions, e. g. due to:

- Patient movement
- Kinks in the infusion line
- Changes in the elevation distance between the bottle and the patient
- etc.

If your treatment requires a precise infusion rate, we recommend using an automatic infusion pump.

Calculation of drip rate:
1 mL infusion solution = 20 drops
Drops/sec = mL of infusion required*20 drops/ 3600 seconds

Runtime in	Bottle size 100 mL		Bottle size 250 mL		Bottle size 500 mL		Bottle size 1000 mL	
	mL / h	Drops / min	mL / h	Drops / min	mL / h	Drops / min	mL / h	Drops / min
1	100	33	250	83	500	167	1000	333
2	50	17	125	42	250	83	500	167
3	33	11	83	28	167	56	333	111
4	25	8	63	21	125	42	250	83
5	20	7	50	17	100	33	200	67
6	17	6	42	14	83	28	167	56
7	14	5	36	12	71	24	143	48
8	13	4	31	10	63	21	125	42
9	11	4	28	9	56	19	111	37
10	10	3	25	8	50	17	100	33
12	–	–	21	7	42	14	83	28
18	–	–	14	5	28	9	56	19
24	–	–	10	3	21	7	42	14

Infusion sets

Practical tips / handling information

Manual aeration with snap-on closure

The aeration flap is closed at the time of manufacture and should remain closed in the following usage situations:

Usage situation	Collapsible infusion solution containers	Rigid infusion solution containers and glass containers
Preparing the infusion: Pierce the container in a vertical position and de-air the connection line	Aeration flap remains closed	Aeration flap only opened after fluid level is set and closed until application of infusion
Perform the infusion	Aeration flap remains closed	Aeration flap is open
Infusion interruptions: ■ Injections ■ Patient transfer/transport ■ Reconnecting the infusion device	Aeration flap remains closed or must be closed before interruption in order to ensure aeration functionality	Aeration flap must be closed before interruption in order to ensure aeration functionality

Structures of the filter membranes

The innovative AirStop membrane in the drip chamber is structured differently from the fluid filters in conventional infusion sets:

Conventional 15 µm filter	AirStop membrane
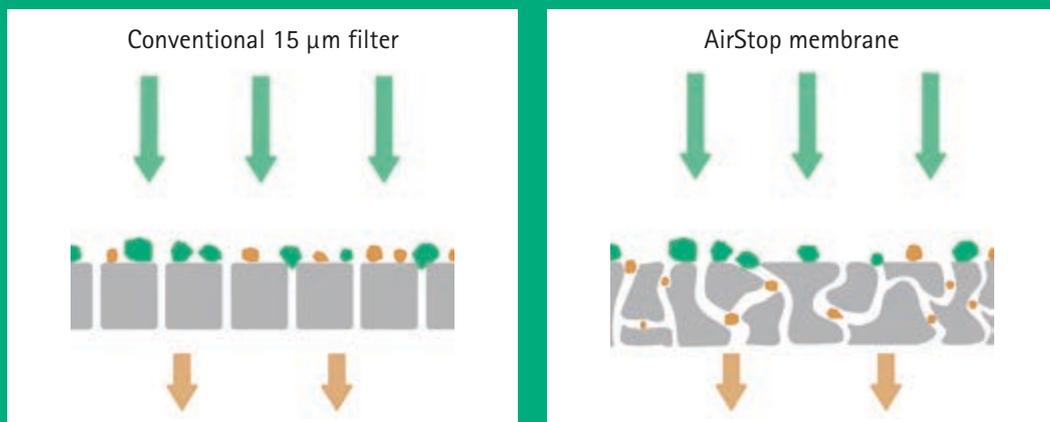
Advantages

■ Protects against air getting into the infusion line* and reduces the risk of infection
■ Compatible solutions are easy to reconnect, saving time and money

* Please note general safety instructions. Functional deviations as per the current state of technology can never be completely ruled out with mass-produced products.

What options do I have if the infusion doesn't run?

The design of the membrane securely holds air back, so that the level does not drop below the bottom of the drip chamber. To fill the infusion line, it may be necessary to keep one of the following in mind:

Important:
Keep the aeration flap closed whenever manipulating the system!

Exception:
Figure 4, when using glass bottles.

1

Push hard!

2

Hang container higher

Push roller clamp closer to drip chamber

Open and shut roller clamp

3

Flick the bottom of the drip chamber

4

Glass bottles:
Open the aeration flap
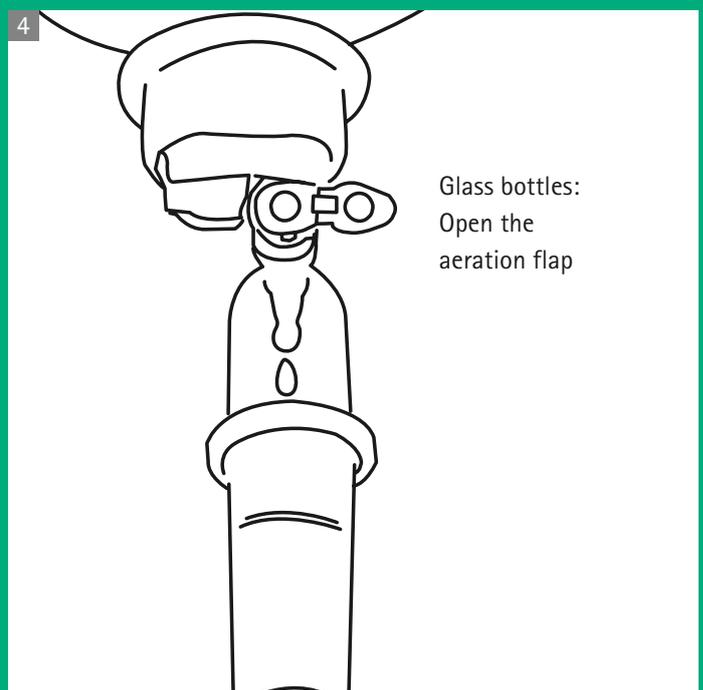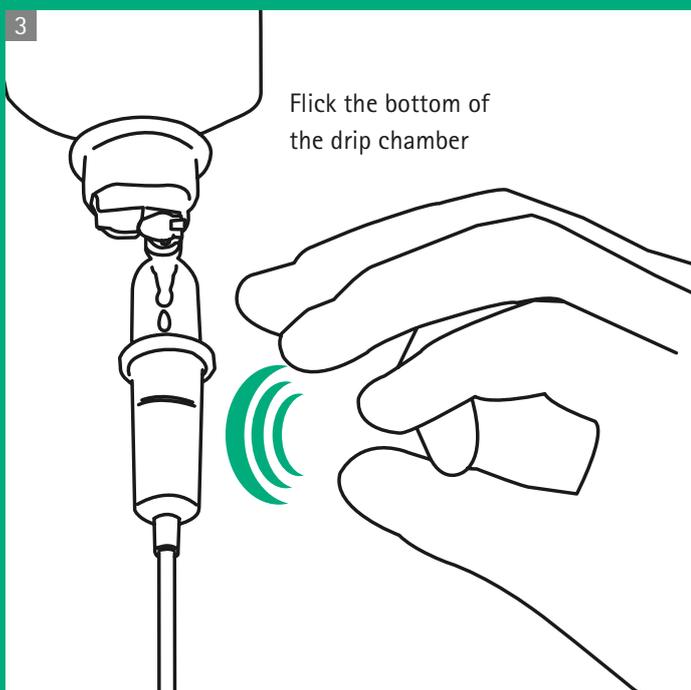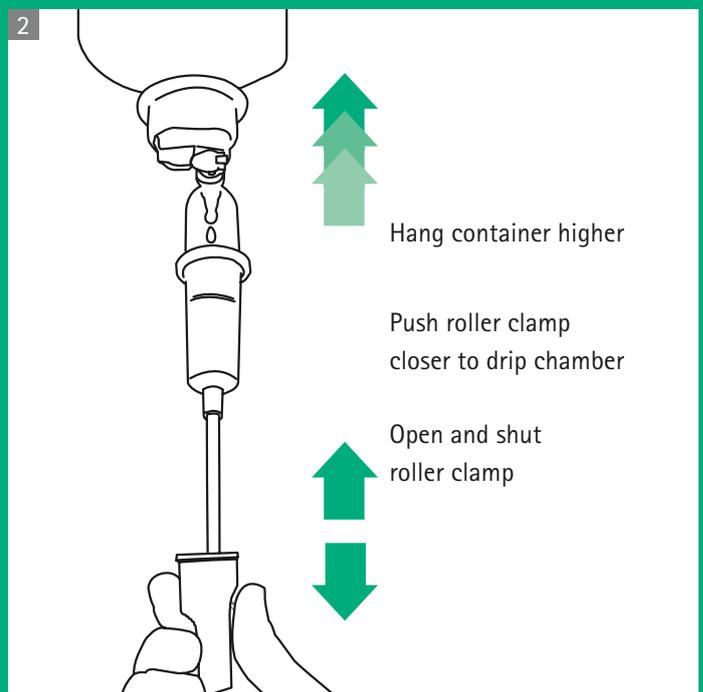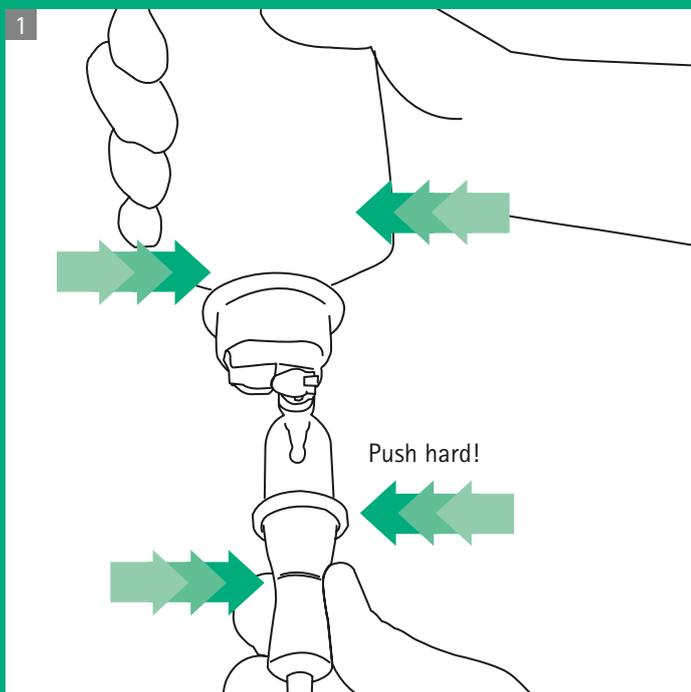
Infusion lines & syringes

Original Perfusor® syringes and lines

Original Perfusor® syringes 20 mL

Perfusor® syringes offer very good sliding properties to complement the precise delivery characteristics of Perfusor® syringe pumps

- For use with Perfusor® syringe pumps
- Made of polypropylene
- Easy access plunger stopper made of synthetic material, with double sealing ring
- Reduced residual volume
- Smudge-proof, easy to read graduation marks
- Latex- and PVC-free
- Luer Lock connector
- Individually packaged sterile

Type	Sales unit	Art. no.
With aspiration cannula	50 pcs	8728623
Without aspiration cannula	50 pcs	8728615

Original Perfusor® syringes 50 mL

Perfusor® syringes offer very good sliding properties to complement the precise delivery characteristics of Perfusor® syringe pumps

- For use with Perfusor® syringe pumps
- Made of polypropylene
- Easy access plunger stopper made of synthetic material, with double sealing ring
- Reduced residual volume
- Smudge-proof, easy to read graduation marks
- Latex- and PVC-free
- Luer Lock connector
- Individually packaged sterile

Type	Sales unit	Art. no.
With aspiration cannula, transparent	100 pcs	8728810F
Without aspiration cannula, transparent	100 pcs	8728844F
With aspiration cannula, orange-transparent with photoprotection to 520 nm	100 pcs	8728861F-06

Original Perfusor® lines

Original Perfusor® lines are the gold standard for precision and long-term consistency in infusion therapy

- For all syringe pumps used for infusion techniques with pressures < 2 bar
- Available in a variety of lengths and materials
- Reduced residual volume
- Luer Lock connectors

Type PVC – length	Outer diameter | inner diameter		Sales unit	Art. no.
Standard 50 cm	2.7 | 1.5 mm	◉●	100 pcs	8255172
Standard 150 cm	2.7 | 1.5 mm	◉●	100 pcs	8722960
Standard 200 cm	2.7 | 1.5 mm	◉●	100 pcs	8722862
Standard 250 cm	2.7 | 1.5 mm	◉●	100 pcs	8255490
Standard 300 cm	2.7 | 1.5 mm	◉●	100 pcs	8255253
Type PVC-free – length	Outer diameter | inner diameter		Sales unit	Art. no.
Standard 50 cm	2 | 1.0 mm	◉○●	100 pcs	8255059
Standard 100 cm	2 | 1.0 mm	◉○●	100 pcs	8255067
Standard 150 cm	2 | 1.0 mm	◉○●	100 pcs	8722935
Standard 200 cm	2 | 1.0 mm	◉○●	100 pcs	8723060
Standard 250 cm	2 | 1.0 mm	◉○●	100 pcs	8272565
Standard 300 cm	2 | 1.0 mm	◉○●	100 pcs	8250146
Transparent orange with photoprotection to 520 nm, 150 cm	2 | 1.0 mm	◉○●	100 pcs	8723017
Transparent orange with photoprotection to 520 nm, 200 cm	2 | 1.0 mm	◉○●	100 pcs	8723018

◉ DEHP-free   ○ PVC-free   ● Latex-free

Infusion lines & syringes

Original Perfusor® syringes and lines

- Allows color coding of highly potent medicinal products
- Quick identification of specific drug applications
- Reduced risk of mix-ups
- Low residual volume
- Specific material (polyethylene) for more accurate application, faster start-up behavior and alarm response times
- Color-coded versions: blue, magenta, green

PE
Polyethylene (PE)

PHT DEHP
DEHP-free

PVC
PVC-free

Product	Color	Material	Connector	Overall length (cm)	Diameter (mm)	Remaining volume (mL)	Sales unit Pc.	Art. no.
Original Perfusor® line	■	PE (PVC-free)	Luer lock	150	1.0 x 2.0	1.27	100	8723020
				200		1.67		8723021
	■	PE (PVC-free)	Luer lock	150	1.0 x 2.0	1.27	100	8723025
				200		1.67		8723026
	■	PE (PVC-free)	Luer lock	150	1.0 x 2.0	1.27	100	8723023
				200		1.67		8723024
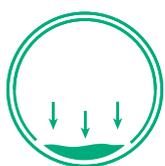
Reduced
residual volume

Pressure resistant
to 2 bar
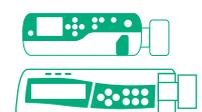
Suitable for all commercially
available syringe pumps

Infusion and transfusion devices

Infusion sets

Exadrop®
Gravity infusion device with integrated drip regulator

- Finely graduated regulator
- **Important note:** The scale markings are approximate values. They are created using a reference of 0.9 % NaCl solution, applied using a size G18 Vasofix® Braunula® at a static elevation difference of approx. 76 cm without CVP. As such, always be sure to check and verify the scale markings. Failure to do so could create a risk of over- or underdosage, with all of the associated risks to the patient! Please note the instructions in the user information.
- Constant, tube-independent drip rate
- Sliding clamp for short-term infusion interruption
- Luer Lock connector
- DEHP-free

Type/Tube length	Sales unit	Art. no.
Standard, 150 cm	50 pcs	4061209
Standard, 180 cm	50 pcs	4061284

Infusion and transfusion devices

Infusion sets

Dosifix®

for drug admixture and administration

- 150 mL dosage container with fine graduation markings
- Bacteria-proof aeration
- 15 µm liquid filter
- Injection option
- Safety flotation valve
- Micro drops (60 drops equals 1 mL) or macro drops (20 drops/1 mL)
- Luer Lock connector
- Admixture function through Safeflow injection ports on top of dosing container
- Air Stop function: helps prevent air from entering the system
- Prime Stop: for leak-free de-airing

Stabilization
mount

Dosing function: Calibrated 150 mL dosing container
to restrict the infused volume

Admixture function: Safeflow Admixture Port
for needle-free drug admixture in dosing container

Flushing function: Connection to an infusion solution
Allows flushing without re-puncture

Advantage

AirStop
Helps to prevent air from entering the system

AIR STOP

Roll clamp
for flexible adjustment of flow rates

Spike lid on roll clamp
for safe disposal

Spike with bacteria-proof de-airing valve
for use with all types of infusion containers

Advantage

PRIME STOP

PrimeStop
for leak-free deairing

Safeflow Y injection port
for needle-free medication application

Back Check Valve
helps prevent backflow during bolus injection

	Gravity / Pressure	Drops/mL	Injection option	Check valve	Length (cm)	Pc/box	Art. no.
Dosifix® Safeset	Gravity/Pressure	60	Cannula	No	250	25	4037011
Dosifix® Safeset	Gravity/Pressure	60	Needle-free Safeflow	yes	250	25	4037012
Dosifix® Safeset	Gravity/Pressure	20	Needle-free Safeflow	yes	250	25	4037032

Ecospike®

Infusion device for large animals with 1 spike for gravity infusions

- No liquid filter
- No aeration
- Luer Lock connector

Type/Tube length	Sales unit	Art. no.
Ecospike® large lumen, 330 cm tube	25 pcs	2112278

Infusion and transfusion devices

Infusion sets

Sangofix® B

Transfusion device without aeration for blood bags

- For transfusions of 1-2 units of blood
- 200 µm standard filter, filter surface area: 11 cm²
- Special piercing spike for bags to prevent bag perforation and allow complete emptying
- Convenient drip chamber design with highly transparent viewing glass
- Spin-Lock® connector (with PrimeStop)
- Latex- and DEHP-free

| Type/Tube length	Sales unit	Art. no.
Spin-Lock® connector, 150 cm tube	100 pcs	4117301

Sangofix® Air

Vented transfusion set for blood products in glass bottles

- 200 µm standard filter, filter surface area: 11 cm²
- Bacteria-proof aeration, can be closed with Euro flaps
- Sharp piercing spike makes bottle easy to pierce
- Luer Lock connector
- DEHP-free

Type/Tube length	Sales unit	Art. no.
Lock connector, 180 cm tube length	100 pcs	4116011F

UV-protect

Orange-transparent photoprotection products by B. Braun
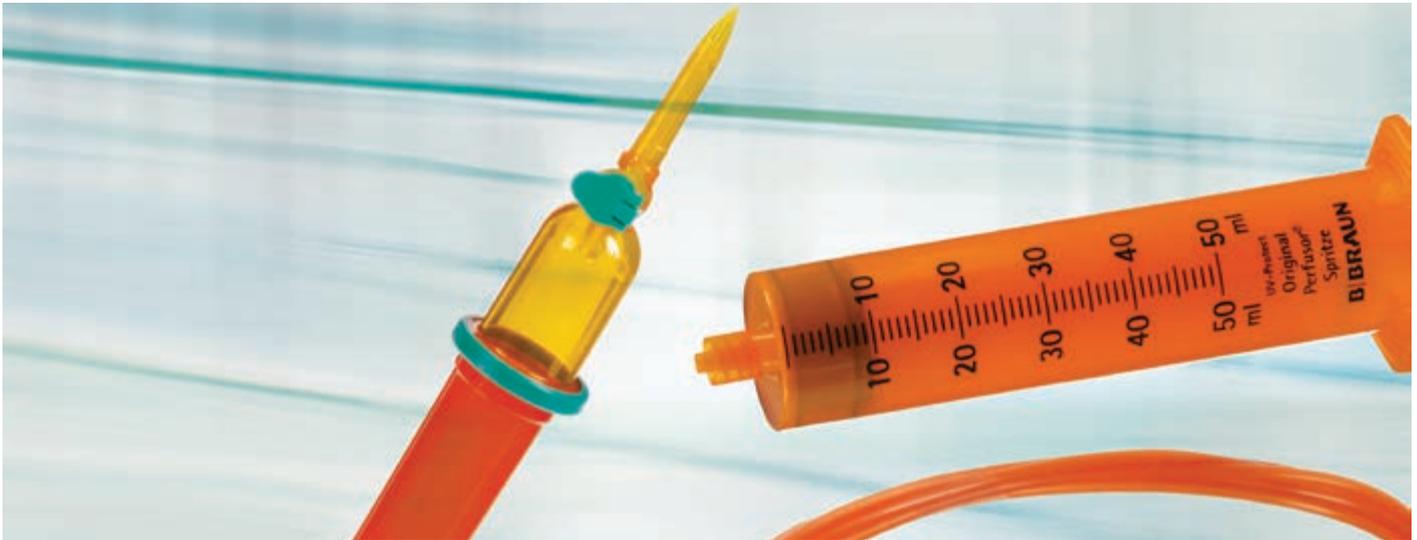
Why do some medications need to be protected against light when used?

When medications that require photoprotection are exposed to light during administration, it can break down the active ingredient and/or cause toxic by-products to form. Administering the medication without photoprotection could also cause the patient pain.

Which pharmaceuticals require photoprotection?

Pharmaceutical products that require photoprotection differ in terms of their degree of light sensitivity. A few medications, such as vitamins, require photoprotection against wavelengths of up to 520 nm. B. Braun's UV-protect portfolio is designed for photoprotected application of pharmaceuticals; it covers the entire spectrum of light-sensitive medications.

See the professional information provided for the substance in question to determine whether it requires photoprotection during administration.

B. Braun's orange-transparent UV-protect portfolio includes a range of products to be used in the application of light-sensitive medications; these products offer a number of advantages over the black light-shield lines previously available on the market:

- Provides complete photoprotection for increased safety
- Photoprotection within the relevant light wavelength spectrum (290-520 nm) is identical to that of black lines
- Orange-transparent UV-protect portfolio design allows users to identify air bubbles or particles quickly
- Products are PVC- and DEHP-free, preventing the risk of DEHP exposure
- Orange coloration makes B. Braun's photoprotection product range easy to identify

Medications that must be photoprotected during application

Wavelength (nm)

500

- Anti-infective agents
- Antineoplastic / cytotoxic agents
- Cardiovascular agents
- Vitamins
- Central nervous system agents
- Electrolyte solutions
- Gastrointestinal therapy
- Autonomous agents

■ Drug groups
▬ Light protection
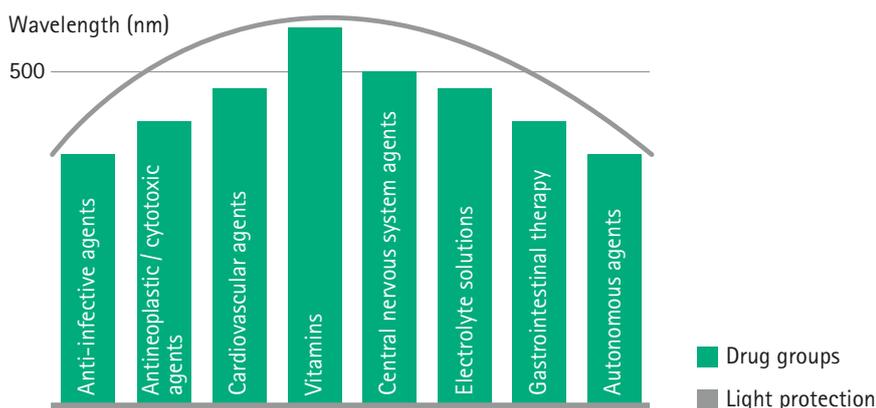
Sources:

Binninger, C.; Roschke, I., Light sensitive drugs and light protecting accessories, Clinical Investigation, B. Braun Melsungen AG, Hospital Care Division, Dr. Roschke GmbH, Cologne, 2007. Landerer, S., Untersuchungen der Photoinstabilität von kardiovaskulären Arzneistoffen und Photostabilisierung von Infusionslösungen, Doctoral dissertation for the Faculty of Chemistry and Pharmacy at Ludwig Maximilian University, submitted by Sabine Landerer, Aalen, Munich, 2000.

UV-protect

Orange-transparent photoprotection products by B. Braun

	Description	Sales unit	Art. no.
	Intrafix® Primeline UV-protect With PrimeStop closure cap ▪ 180 cm, PVC-/DEHP-free ▪ Pressure resistant up to 2 bar	100 pcs	0086774R
	Intrafix® SafeSet UV-protect ▪ 180 cm, PVC-/DEHP-free ▪ Pressure resistant up to 2 bar	100 pcs	4063131
	Infusomat® Space Line SafeSet UV-protect ▪ 250 cm, PVC-/DEHP-free	100 pcs	8700128SP
	Infusomat® Space Line SafeSet UV-protect with Safeflow Y-valve ▪ 250 cm, PVC-/DEHP-free	100 pcs	8250438SP
	Infusomat® Space Line UV-protect ▪ 250 cm, PVC-/DEHP-free	100 pcs	8700127SP
	Infusomat® Space Line UV-protect with Safeflow Y-valve ▪ 250 cm, PVC-/DEHP-free	100 pcs	8250437SP
	Original Perfusor® UV-protect syringe ▪ 50 mL ▪ With 15 µm filter cannula	100 pcs	8728861F-06
	Original Perfusor® line UV-protect ▪ 150 cm, polyethylene	100 pcs	8723017
	Original Perfusor® line UV-protect ▪ 200 cm, polyethylene	100 pcs	8723018
	Infusomat® plus SafeSet UV-protect line ▪ 240 cm, PUR	100 pcs	8700260

Gravity systems	Infusomat® Space	Perfusor® Space

Infusion solutions and their ingredients

Compared to patient blood

Electrolytes / Solution	Na⁺	K⁺	Ca²⁺	Mg²⁺	Cl⁻	Glucose g/l	Lactate	Acetate / Malate	Theor. osmolality (mOsmol/l)
NaCl 0.9 %	154	–	–	–	154	–	–	–	308
Ringer solution	147	4.0	2.2	–	156	–	–	–	309
Ringer lactate	130.5	5.37	1.84	–	112	–	27.84	–	277
Sterofundin® VG 5	140	4	2.5	1	141	50	–	10 malate	576
B. Braun Sterofundin® ISO	145	4	2.5	1	127	–	–	24 / 5	308
Glucose 5 %	–	–	–	–	–	50	–	–	278
Glucose 40 %	–	–	–	–	–	400	–	–	2220
Hypertonic NaCl 7.5 g / 100 mL	1283	–	–	–	1283	–	–	–	2566
Plasma dog	140–155	3.5–5.1	2.3–3.0	0.6–1.3	96–113	–	–	–	290–310
Plasma cat	145–158	3.0–4.8	2.3–3.0	0.6–1.3	110–130	–	–	–	308–335

Ecoflac® plus

From drug admixture to pharmaceutical administration – the Ecoflac® plus provides a wide range of impressive advantages:

- Demonstrably closed system with B. Braun Intrafix® SafeSet infusion set to **reduce potential microbial contamination**

- Container can self-collapse during infusion; no airing required

- DEHP-, PVC- and latex-free

- Stable, non-slip and shatter-proof, as no glass is used

- Allows upright or prone positioning

- Integrated mount allows easy handling

Drum head

- **Two germ-free injection sites:** No need to disinfect stopper immediately after opening

- **Resealable port elements** on the drum head reduce bacteria ingress into the container and infusion solution leakage

The Ecoflac® plus is free of stabilizers and softeners, So it does not have a tendency towards adsorption or precipitation of added medications, nor do materials migrate into the solution.

In other words, Ecoflac® plus gives you a great deal of pharmaceutical safety.

Ecoflac® plus reduces contamination risks, increasing safety for both patients and users.

Read infusion quantities precisely

- Keep ventilation closed when using infusion lines
- When the bottle is full, the level is above the scale
- Ecoflac® Plus bottle gradually contracts
- Scale adjusts to current fluid level
- The scale shows how much of the fluid has been infused while emptying

Ecoflac® full   Ecoflac® emptied

Crystalloid infusion solutions

1. Carrier solutions

Isotonic sodium chloride solution ad us. vet. B. Braun
Isotonic electrolyte solution for infusion and medication admixture

Description
- Infusion solution for dogs, cats, cattle, sheep, goats, pigs, horses

Advantages
- Can be mixed with many other electrolyte solutions or medications
- No waiting period

Composition (1000 mL solution contains):
- Active ingredient: Sodium chloride, 9.0 g; other ingredients: Water for injection purposes
- Electrolytes (mmol/l): Sodium 154; chloride 154
- Theoretical osmolarity: 309 mOsm/l
- pH value: 5.0 – 7.0

Indications
- For fluid and electrolyte substitution
- Short-term intravasal volume replacement
- Isotonic and hypotonic dehydration
- As carrier solution for electrolyte concentrates and compatible medications
- Wound treatment, moistening towels and bandages

Dosage, type and duration of use
- For intravenous and subcutaneous infusion, intraperitoneal injection and external use
- Adjust infusion quantities based on fluid deficits – if accelerating infusion rate, check water balance regularly. Checking electrolytes is advisable.
- Contraindications: Hypernatremia, hyperhydration

Type	Sales unit
500 mL Ecoflac® plus	10 pcs
1000 mL Ecoflac® plus	10 pcs
5000 mL Ecobag®	2 pcs

Ask your local contact for availability

Mandatory product texts at the end of the brochure

Aqua ad iniectibilia Braun

Solvent for preparing parenterals

Description

- For creating and diluting parenteral preparations
- Available in glass bottles or Ecoflac® plus

Type	Sales unit
Aqua ad iniectabilia Braun, Ecoflac® plus, 10 x 500 mL	10 pcs
Aqua ad iniectabilia Braun, Ecoflac® plus, 20 x 100 mL	20 pcs
Aqua ad iniectabilia Braun, Ecoflac® plus, 10 x 1000 mL	10 pcs
Aqua ad iniectabilia Braun, glass bottle, 20 x 100 mL	20 pcs
Aqua ad iniectabilia Braun, glass bottle, 6 x 1000 mL	6 pcs
Aqua ad iniectabilia Braun, glass bottle, 10 x 500 mL	10 pcs

Ask your local contact for availability

Crystalloid infusion solutions

2. Full electrolyte solution

Sterofundin® ISO B.Braun Vet Care
Plasma–adapted, isotonic full electrolyte solution

Description
- Comprehensive use in many patients for shock therapy, rehydration and maintenance infusion
- Can also be used in liver failure patients and puppies
- Higher calcium content (hypocalcaemia)
- Incl. magnesium
- Added acetate allows use as a buffer solution even with heavy acidosis
- Does not affect acid-base status

Composition (1000 mL of infusion solution contains):
- Active ingredients: 6.80 g sodium chloride, 0.30 g potassium chloride, 0.20 g magnesium chloride hexahydrate, 0.37 g calcium chloride dihydrate, 3.27 g sodium acetate trihydrate, 0.67 g L-malic acid (E296); water for injection, sodium hydroxide
- Electrolyte concentrations: 145.0 mmol/l sodium, 4.0 mmol/l potassium, 1.0 mmol/l magnesium, 2.5 mmol/l calcium, 127.0 mmol/l chloride, 24.0 mmol/l acetate, 5.0 mmol/l malate

Indications
- Fluid and electrolyte replacement for dehydration patients
- Shock
- Maintenance infusion
- Mild acidosis

Dosage, type and duration of use
- For intravenous use
- Infusion quantities and rates are based on the animal's clinical condition, existing deficits, maintenance requirements, and whether losses are ongoing.
- Contraindications: Alkalosis, edema (hepatic, renal or cardial), hyperhydration, hyperkalemia, hypernatremia, hyperlactatemia, liver failure
- Side effects: The infusion contains calcium, so cardiac effects cannot be ruled out.

Type	Sales unit
250 mL Ecoflac® plus	10 pcs
500 mL Ecoflac® plus	10 pcs
1000 mL Ecoflac® plus	10 pcs

Ask your local contact for availability

Ringer lactate solution in accordance with Hartmann B. Braun Vet Care
Isotonic electrolyte solution

Description
- Infusion solution for dogs, cats, cattle, sheep, goats, pigs, horses

Advantages
- Fluid and electrolyte replacement
- No waiting period

Composition (100 mL solution contains):
- Active ingredients: 0.600 g sodium chloride; 0.040 g potassium chloride; 0.027 g calcium chloride dihydrate; 0.312 g sodium-(S)-lactate; (0.624 g as sodium-(S)-lactate solution)
- Other ingredients: Water for injection purposes
- Electrolyte concentrations (mmol/l): Sodium 130.49; potassium 5.37; calcium 1.84; chloride 111.70; lactate 27.84
- Theoretical osmolarity: 277 mOsm/l; titration acidity <1 mmol/l
- pH value: 5.0-7.0

Indications
- Isotonic and hypotonic dehydration
- Metabolic acidosis
- Maintenance of extracellular fluid volume
- Electrolyte replacement following burns

Dosage, type and duration of use
- For intravenous use
- Infusion quantities and rates are based on the animal's clinical condition, existing deficits, maintenance requirements, and whether losses are ongoing.
- Contraindications: Alkalosis, edema (hepatic, renal or cardial), hyperhydration, hyperkalemia, hypernatremia, hyperlactatemia, liver failure
- Side effects: The infusion contains calcium, so cardiac effects cannot be ruled out.

Type	Sales unit
500 mL Ecoflac® plus	10 pcs
1000 mL Ecoflac® plus	10 pcs
Ringer lactate VET EBI 5000 mL	2 pcs

Ask your local contact for availability

Mandatory product texts at the end of the brochure

Crystalloid infusion solutions

2. Full electrolyte solution

Ringer infusion solution B. Braun
Full electrolyte solution

Description
- For fluid and electrolyte substitution in patients with hypochloremic alkalosis
- Chloride losses
- Short-term intravasal volume replacement
- Isotonic and hypotonic dehydration
- Carrier solution for compatible electrolyte concentrates and medications
- Available in Ecoflac® plus

Type	Sales unit
RINGER SOLUTION B.BRAUN EP 500 mL	10 pcs
RINGER SOLUTION B.BRAUN EP 1000 mL	10 pcs

Ask your local contact for availability

Ringer – rinsing solution
Topical rinsing solutions

Description
- Sterile and non-pyrogenic

Type	Sales unit
RINGER B. Braun EBC 3000 mL	4 pcs
RINGER B. Braun EBCL 3000 mL	4 pcs
RINGER B. Braun EBCL 5000 mL	2 pcs

Ask your local contact for availability

Mandatory product texts at the end of the brochure

Crystalloid infusion solutions

3. One-third solutions (maintenance solutions)

Sterofundin® BG-5
Isotonic electrolyte solution

Description
- For administering water and electrolytes with low carbohydrate content
- Partial coverage of energy requirements
- Carrier solution for compatible electrolyte concentrates and medications
- 24.1 mmol/l potassium and 5% glucose

Composition (1000 mL of infusion solution contains):
- Active ingredients: 1.25 g sodium chloride, 1.8 g potassium chloride, 1.14 g sodium hydrogen phosphate dihydrate, 0.51 g magnesium chloride hexahydrate, 5.60 g sodium lactate solution 40% w/w, 55.0 g glucose monohydrate, water for injection
- Electrolyte concentrations: 53.7 mmol/l sodium, 24.1 mmol/l potassium, 2.5 mmol/l magnesium ion, 53.5 mmol/l chloride, 25.0 mmol/l lactate, 5.0 mmol/l phosphate ion

Indications
- For administering water and electrolytes with low carbohydrate content
- Carrier solution for compatible electrolyte concentrates and medications

Dosage, type and duration of use
- For intravenous use
- As permanent drip adapted to patient fluid requirements for physiological metabolic purposes
- Serum electrolytes must be checked regularly before and during use
- Observe maximum infusion speed
- Contraindications: Hyperkalemia, metabolic acidosis, heart failure, pulmonary or cerebral edema

Type	Sales unit
500 mL Ecoflac® plus	10 pcs
1000 mL Ecoflac® plus	10 pcs

Ask your local contact for availability

Crystalloid infusion solutions

4. Hypertonic solution

Hypertonic sodium chloride solution 7.5 g / 100 mL B. Braun Vet Care
Hypertonic electrolyte solution

Description
- Infusion solution for dogs, cats, cattle, sheep, goats, pigs, horses

Advantages
- Quick expansion of plasma volume
- Rapid improvement of microcirculation
- Intracranial pressure reduction
- No waiting period

Composition (100 mL solution contains):
- Active ingredient: Sodium chloride 7.5 g
- Other ingredients: Water for injection purposes
- Electrolyte concentration (mmol/l): Sodium 1283; chloride 1283
- Theoretical osmolarity: 2566 mOsm/l

Indications
- Hemorrhagic shock
- Endotoxic shock
- Septic shock
- Cranial/brain trauma
- Hypovolemic shock

Dosage, type and duration of use
- For intravenous use
- 4 mL/kg body weight, to be administered over no more than 15 minutes. Do not exceed an infusion rate of 1mL/kg body weight/minute. After administering B. Braun Vet Care hypertonic sodium chloride solution (7.5 g/100mL), infuse an isotonic electrolyte solution to rehydrate the interstitium.
- Contraindications: Hypertonic hyperhydration, kidney failure, severe electrolyte imbalances, uncontrolled bleeding, pulmonary edema, water and sodium chloride retention, heart failure, hypertension, or hypertonic dehydration
- Side effects: Excessive sodium levels can result in hypokalemia; continuous loss of potassium or hyperchloremia can aggravate this condition. Erroneous administration of hypertonic NaCl solution to dehydrated animals can aggravate existing extracellular hypertonia, which can exacerbate the patient's symptoms and result in death. Short intravenous infusions can cause edema, especially in patients with heart or kidney failure. This may result in arrhythmia, hypotension, hemolysis, hemoglobinuria, bronchoconstriction and/or hyperventilation. Infusion into small peripheral veins can be painful. Infusion of a hypertonic sodium chloride solution can result in diuresis with excretion of hypertonic urine. Be mindful of the risk of thrombosis.

Type	Sales unit
500 mL Ecoflac® plus	10 pcs

Crystalloid infusion solutions

4. Infusion solutions for osmosis therapy

Osmofundin® 15% N infusion solution
Infusion solution for osmotherapy with 15% mannitol

Description
- Infusion solution

Advantages
- Reduces cerebral pressure with intact blood-brain barrier
- Decreases intraocular pressure in acute glaucoma

Composition (1000 mL solution contains):
- Active ingredient: 150.0 g Mannitol

Indications
- Cranial/brain trauma
- Elevated cranial pressure
- Acute glaucoma

Dosage, type and duration of use
- For intravenous use
- Bolus 0.5–2 g/kg body weight = 3.3-13.5 mL/kg over 30 min
- Repeat up to 3 times at intervals of 6 h
- Contraindications
  - Persistent oliguria/anuria
  - Acute cardiac decompensation
  - Blood-brain barrier disruption
  - Pulmonary edema
  - Dehydration
  - Drainage obstruction in the area of the urinary tract

Type	Sales unit
500 mL Ecoflac® plus	10 pcs
1000 mL Ecoflac® plus	10 pcs

Ask your local contact for availability

Mandatory product texts at the end of the brochure

Colloidal infusion solutions

Gelafundin® Iso

Colloidal plasma volume replacement in an isotonic, balanced full electrolyte solution

Description
- Infusion solution
- For the prevention and treatment of imminent or manifest relative or absolute hypovolemia and shock
- Gelafundin® ISO 40 mg/mL offers colloidal plasma volume replacement in an isotonic, balanced full electrolyte solution
- Plasma-adapted electrolyte concentrations, incl. calcium

Composition (1000 mL of infusion solution contains):
- Active ingredient: 40.0 g sodium chloride, 5.55 g sodium acetate trihydrate, 0.30 g potassium chloride, 0.15 g calcium chloride dihydrate, 0.20 g magnesium chloride hexahydrate
- Electrolyte concentration: 151 mmol/l sodium, 103 mmol/l chloride, 4 mmol/l potassium, 1 mmol/l calcium, 1 mm/l magnesium, 24 mmol/l acetate

Indications
- Colloidal plasma volume replacement solution in isotonically balanced full electrolytic solution
- To treat relative or absolute hypovolemia
- Elevation of oncotic pressure

Dosage, type and duration of use
- For intravenous use
- Use only if crystalloid therapy alone is not sufficient
- In combination with crystalloids
- Max. 4 mL/kg as bolus

Type	Sales unit
Gelafundin® ISO 40 mg/mL, Ecoflac® plus, 10 x 500 mL	10 pcs

Ask your local contact for availability

Injection concentrates

Concentrates for the preparation of infusion solutions

Name	Electrolyte in mg/mL	Electrolytes in mmol/mL	Indication
Potassium chloride 7.45 % Braun	Potassium chloride 74.5 mg/mL	Potassium 1 mmol/mL Chloride 1 mmol/mL	Potassium deficits, especially with hypochloremic alkalosis
Potassium chloride 14.9 % Braun	Potassium chloride 149 mg/mL	Potassium 2 mmol/mL Chloride 2 mmol/mL	Potassium deficits, especially with hypochloremic alkalosis
Sodium chloride 5.85 % Braun	Sodium chloride 58.5 mg/mL	Sodium 1 mmol/mL Chloride 1 mmol/mL	Hyponatremia, hypochloremia, hypotonic hyperhydration
Sodium chloride Braun 10 %	Sodium chloride 100 mg/mL	Sodium 1.7 mmol/mL Chloride 1.7 mmol/mL	Hyponatremia, hypochloremia, hypotonic hyperhydration
Sodium chloride Braun 20 %	Sodium chloride 200 mg/mL	Sodium 3.4 mmol/mL Chloride 3.4 mmol/mL	Hyponatremia, hypochloremia, hypotonic hyperhydration
Sodium hydrogen carbonate 8.4 % B. Braun	Sodium hydrogen carbonate 84 mg/mL (sodium bicarbonate)	Sodium 1 mmol/mL Hydrogen carbonate 1 mmol/mL	Correction of metabolic acidosis, urine alkalization for intoxication with weak organic acids (e.g., barbiturates, acetyl salicylic acids), urine alkalization for improving solubility of medications with limited solubility in neutral or acidic substances (e.g., methotrexate, sulfonamide), urine alkalization with hemolysis
Sodium phosphate Braun	- Sodium monohydrogen phosphate-Dodecahydrate 152.5 mg/mL - Sodium dihydrogen phosphate- Dihydrate 23.10 mg/mL	Sodium 1 mmol/mL Phosphate 0.6 mmol/mL	Phosphate replacement in case of deficits
Alcohol concentrate 95 % Braun	Ethanol 96 %		Ethylene glycol poisoning
Calcium gluconate B. Braun 10 % **Injection solution**	Calcium gluconate 94 mg/mL	Calcium 0.23 mmol/mL	Treatment of acute symptomatic hypocalcemia

▲ See the corresponding professional information for dosage details.
  Additional information is available in the mandatory texts beginning on page 26 and in the current professional information.

Theoret. Osmolarity mOsm/l	Recommended carrier solution
2000	Glucose 5 % NaCl 0.9 % Ringer lactate solution Full electrolyte solutions
3995	Glucose 5 % NaCl 0.9 % Ringer lactate solution Full electrolyte solutions
2000	Glucose 5 % NaCl 0.9 %
3400	Glucose 5 % NaCl 0.9 %
6800	Glucose 5 % NaCl 0.9 %
2000	Glucose 5 % NaCl 0.9 %
1600	Glucose 5 % NaCl 0.9 %
	Glucose 5 % NaCl 0.9 %
660	Glucose 5 % NaCl 0.9 %

Parenteral nutrition

For dogs and cats

Total parenteral nutrition protocol:

1. Resting metabolic rate (RMR)

$70 \times$ (current body weight in kilograms)$^{0.75}$ = kcal/day

alternative for animals weighing 3-25 kg:

$30 \times$ (current body weight in kilograms) + 70 = kcal/day

Body weight: _____kg
Resting metabolic rate (RMR) =_____kcal/day

2. Protein requirements

	dog	cat
*Standard	4–5 g/100 kcal	6 g/100 kcal
*Decreased needs (liver/kidney failure)	2–3 g/100 kcal	4–5 g/100 kcal
*Increased needs (protein-losing conditions)	5–6 g/100 kcal	6–8 g/100 kcal

(RMR÷100) × _____g/100 kcal= _____g protein requirement/day

3. Daily required volumes of nutrient solutions

a. 10% amino acid solution = 0.1 g protein/mL

_____g protein requirements/day × 0.1 g/mL = _____mL amino acids/day

b. Non-protein calories:

Calories from protein (4 kcal/g) are subtracted from the RMR to determine total non-protein calorie needs:

_____g protein requirements/day × 4 kcal/g = ____kcal provided through protein
_____RMR (kcal) - _____kcal from protein =_____non-protein kcal

c. Non-protein calories are typically given as a 50:50 blend of lipid and glucose (adjust ratio if necessary due to disease, e.g., diabetes, hypertriglyceridemia):

▪ 20% lipid solution = 2 kcal/mL
  To cover 50% of non-protein kcal:

_____lipid kcal required ÷ 2 kcal/mL = ____mL Lipofundin® MCT 20%

▪ 40% glucose solution = 1.6 kcal/mL
  To cover 50% of non-protein kcal:

_____Glucose kcal required   1.6 kcal/mL = _____mL glucose 40% ad us. Vet. B. Braun

Reference:
Daniel L. Chan and Lisa M. Freeman (2012): Parenteral Nutrition, S. DiBartola: Fluid, electrolyte, and acid bade disorders in small animal practice, 4. Ed., p. 605–622

4. Total daily needs

_____mL 10% amino acid solution

_____mL 20% lipid solution (Lipofundin® MCT 20%)

_____mL 40% glucose solution (glucose 40% ad us. Vet. B. Braun)

_____mL total volume of TPN solution

5. Administration

Day 1: _____mL/hr

Day 2: _____mL/hr

Day 3: _____mL/hr

Make sure to adjust the patient's other fluids accordingly.

Note: Liquids can be added directly to the TPN if desired (only at the time of preparation).

The necessary monitoring depends on the individual patient.

At minimum, however, the following values should be measured daily:

- Heart/breathing rate
- Catheter insertion site
- Setting
- Body weight*

*Temperature
*Glucose, total solids (check hematocrit tubes for lipaemia)
*Electrolytes (especially potassium) should be checked at least every other day
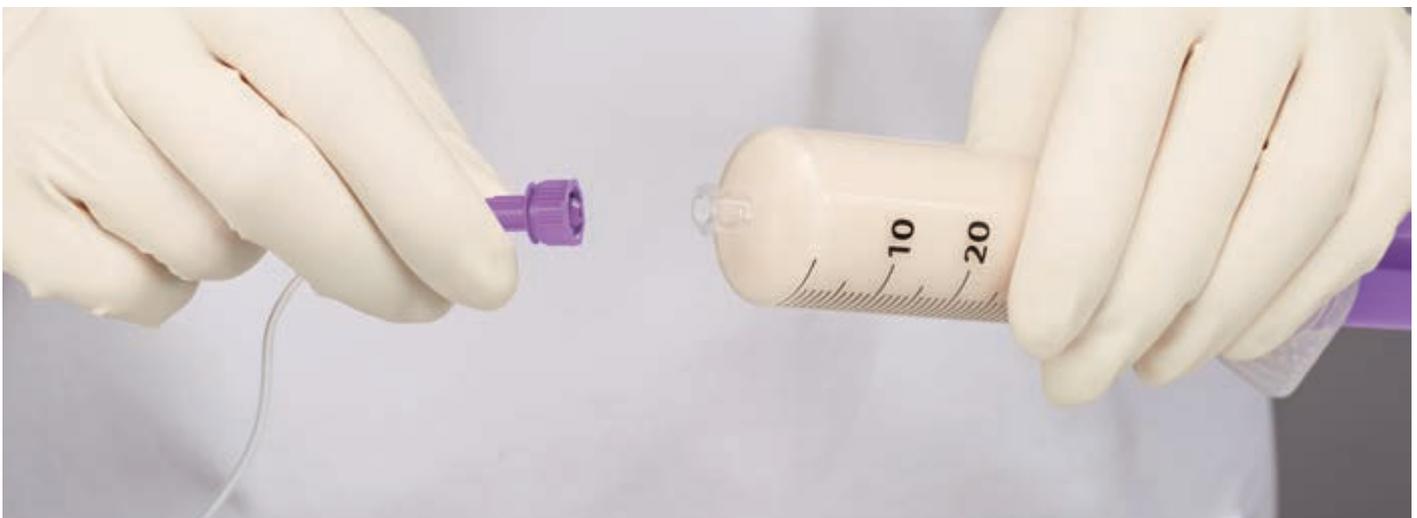
Reference:
Daniel L. Chan and Lisa M. Freeman (2012): Parenteral Nutrition, S. DiBartola: Fluid, electrolyte, and acid bade disorders in small animal practice, 4. Ed., p. 605–622

Parenteral nutrition

For dogs and cats

Resting metabolic rate (RMR)
Animals under 2 kg: 70 x (body weight kg) $^{0.75}$ =Resting metabolic rate kcal/day
Animals over 2 kg: 30 x (body weight kg)+70=Resting metabolic rate kcal/day

Calculating maintenance requirements (BMR)
Additional clinical risk factor e.g. 1.35-1.5 for trauma
Basal metabolic rate in kcal= RMR *factor
Day 1 50% of BMR
Day 2 100% of BMR

Protein requirements
Dog 5–6 g/100 kcal (liver or kidney damage <3 g/100kcal) - 15–25% of BMR
Cat 6–9 g/100 kcal (liver or kidney damage <3 g/100kcal) - 25–35% of BMR

The remaining kcals are filled 1:1 with glucose and fat.

Reference:
Daniel L. Chan and Lisa M. Freeman (2012): Parenteral Nutrition, S. DiBartola: Fluid, electrolyte, and acid bade disorders in small animal practice, 4. Ed., pp. 605–622.

Please note that the generally valid formula was used to calculate resting energy requirements:
[RER(kcal/day)= 70 x kg$^{0.75}$ (Reference No. 15)]. This example calculation is only intended to serve as an illustration. Calculations depend on patient-specific factors and may need to be adjusted individually. As such, B. Braun Vet Care GmbH assumes no liability for usage based on this calculation.

Infusion solutions for parenteral nutrition

Glucose solutions

Glucose solution 40% ad us. vet. B. Braun

Carbohydrate solution, infusion solution.

Description

- Infusion solution for dogs, cats, cattle, sheep, goats, pigs, horses

Advantages

- Treatment and prevention of hyperketonemia.
- Treatment and prevention of hypoglycemia.
- No waiting period

Composition (1000 mL solution contains):

- Active ingredient: Anhydrous glucose 400.0 g (as glucose monohydrate 440.0 g)
- Other ingredients: Water for injection purposes
- Carbohydrates: 400.0 g/l; energy: 6698 kJ/l (= 1600 kcal/l)
- Theoretical osmolarity: 2220 mOsm/l
- pH value: 3.5–5.5

Indications

- High-calorie carbohydrate infusion therapy
- Hypoglycemia
- To cover all or part of patient's carbohydrate needs
- Acetonemia

Dosage, type and duration of use

- For intravenous and intraperitoneal infusion
- Adjust infusion quantity to fit caloric and fluid needs.
  See also: Everyday infusion solutions (Art. No. V09201).
- Contraindications: Hyperglycemia, hyperhydration, acidosis, hypokalemia, and hypotonic dehydration
- Side effects: No known side effects provided that instructions and contraindications are observed

Type	Sales unit
Glucose 40% ad. us. vet., 500 mL, Ecoflac® plus	10 pcs
Glucose 50%, 500 mL, glass bottle	10 pcs
Glucose 20%, 500 mL, Ecoflac® plus	10 pcs
Glucose 10%, 500 mL, Ecoflac® plus	10 pcs

Ask your local contact for availability

Infusion solutions for parenteral nutrition

Protein solutions

Aminoplasmal® B. Braun 10%

Amino acid solution with electrolytes for central venous infusion

Description

- Amino acid solution, available with a limited amount of electrolytes or without electrolytes, for parenteral nutrition when oral or enteral feeding is not possible, inadequate, or contraindicated
- To be used in combination with a suitable energy supply, e.g. in the form of carbohydrate infusions

Properties

- Standard amino acid solution with a balanced supply of essential and non-essential amino acids

Type	Sales unit
Aminoplasmal® B. Braun 10% E, glass bottle, 10 x 500 mL	10 pcs
Aminoplasmal® B. Braun 10%, glass bottle, 10 x 500 mL	10 pcs

Ask your local contact for availability

Aminoplasmal® Pead B. Braun 10%

Amino acid solution with electrolytes for central venous infusion

Description

- Amino acid solution with limited amounts of electrolytes

Example image,
original may differ

Type	Sales unit
Aminoplasmal® Paed 10%, monobag, 12 x 100 mL	12 pcs

Ask your local contact for availability

Mandatory product texts at the end of the brochure

Infusion solutions for parenteral nutrition

Lipid solutions

Lipofundin® MCT 20%

Fat emulsion for parenteral nutrition from MCT/LCT, total lipid content 200 mg/mL

Description

- Fat emulsion for parenteral nutrition from MCT/LCT
- Total lipid content 200 mg/mL

Properties

- 50% medium-chain triglycerides (MCTs) made from coconut oil for rapid energy intake with protein-saving effect
- 50% long-chain triglycerides (LCT) from soybean oil for on-demand supply of essential fatty acids
- Liver-protective
- Improves lung function
- Addition of vitamin E provides protection against peroxidation
- Highly stable, all-in-one blends

Type	Sales unit
Lipofundin® MCT 20%, glass bottle, 10 x 100 mL	10 pcs
Lipofundin® MCT 20%, glass bottle, 10 x 250 mL	10 pcs
Lipofundin® MCT 20%, glass bottle, 10 x 500 mL	10 pcs

Ask your local contact for availability

Mandatory product texts at the end of the brochure

Nutriflex® Lipid novo

For standard care

Our NuTRIflex® Lipid novo triple-chamber bags assist you with standardized parenteral nutrition. Sophisticated product variants allow needs-based nutritional therapy. The NuTRIflex® Lipid novo three-chamber bag contains glucose, amino acids, and our proven MCT/LCT fat emulsion, which is available in different product variants. Balanced nutrient ratios are particularly important here. [1]

Overview of nutrient composition

Select the optimum product variant to fit individual patient needs.

NuTRIflex® Lipid peri novo	NuTRIflex® Lipid plus novo	NuTRIflex® Lipid special novo
▪ peripheral or central venous application ▪ low glucose content	▪ central venous application ▪ simple calculation 1 mL ≈ 1 kcal	▪ central venous application ▪ liquid-reduced variant 1 mL ≈ 1.2 kcal

	NuTRIflex® Lipid peri			NuTRIflex® Lipid plus			NuTRIflex® Lipid special		
Variants [mL]	1250	1875	2500	1250	1875	2500	625	1250	1875
Electrolytes*	+	+	+	+	+	+	+	-/+	-/+
Amino acids [g]	40	60	80	48	72	96	35.0	70.1	105.1
Nitrogen [g]	5.7	8.6	11.4	6.8	10.2	13.7	5	10	15
Glucose [g]	80	120	160	150	225	300	90	180	270
Fat (MCT/LCT) [g]	50	75	100	50	75	100	25	50	75
Total energy [kcal]	955	1435	1910	1265	1900	2530	740	1475	2215
Non-protein energy [kcal]	795	1195	1590	1075	1615	2155	600	1195	1795
Glucose/fat ratio	40 % / 60 %			56 % / 44 %			60 % / 40 %		
theoretical osmolarity [mOsm/L]	840			1215			1545 (with electrolyte) 1330 (without electrolytes)		
max. infusion rate [mL/kg body weight per hour]	2.5	2.5	2.5	2.0	2.0	2.0	1.7	1.7	1.7

* Variants available with (+) and without (–) electrolytes

Infusion solutions for parenteral nutrition

Nutrition solutions

Nutriflex® Lipid plus novo

Three-chamber bag with amino acids, glucose, an MCT/LCT emulsion and electrolytes; nutritionally balanced and easy to calculate (1 mL ≈ 1 kcal)

- As part of parenteral nutrition in patients with moderate catabolism, if oral or enteral feeding is not possible, inadequate, or contraindicated
- For central venous application

Product	Sales unit
NuTRIflex® Lipid plus novo	5 x 1250 mL
NuTRIflex® Lipid plus novo	5 x 1875 mL
NuTRIflex® Lipid plus novo	5 x 2500 mL

Ask your local contact for availability

Nutriflex® lipid peri novo

Three-chamber bag with amino acids, glucose, an MCT/LCT emulsion and electrolytes; balanced nutrients, reduced glucose content

- As part of parenteral nutrition in patients with mild-to-moderate catabolism where oral or enteral feeding is not possible, inadequate. or contraindicated
- For peripheral or central venous application

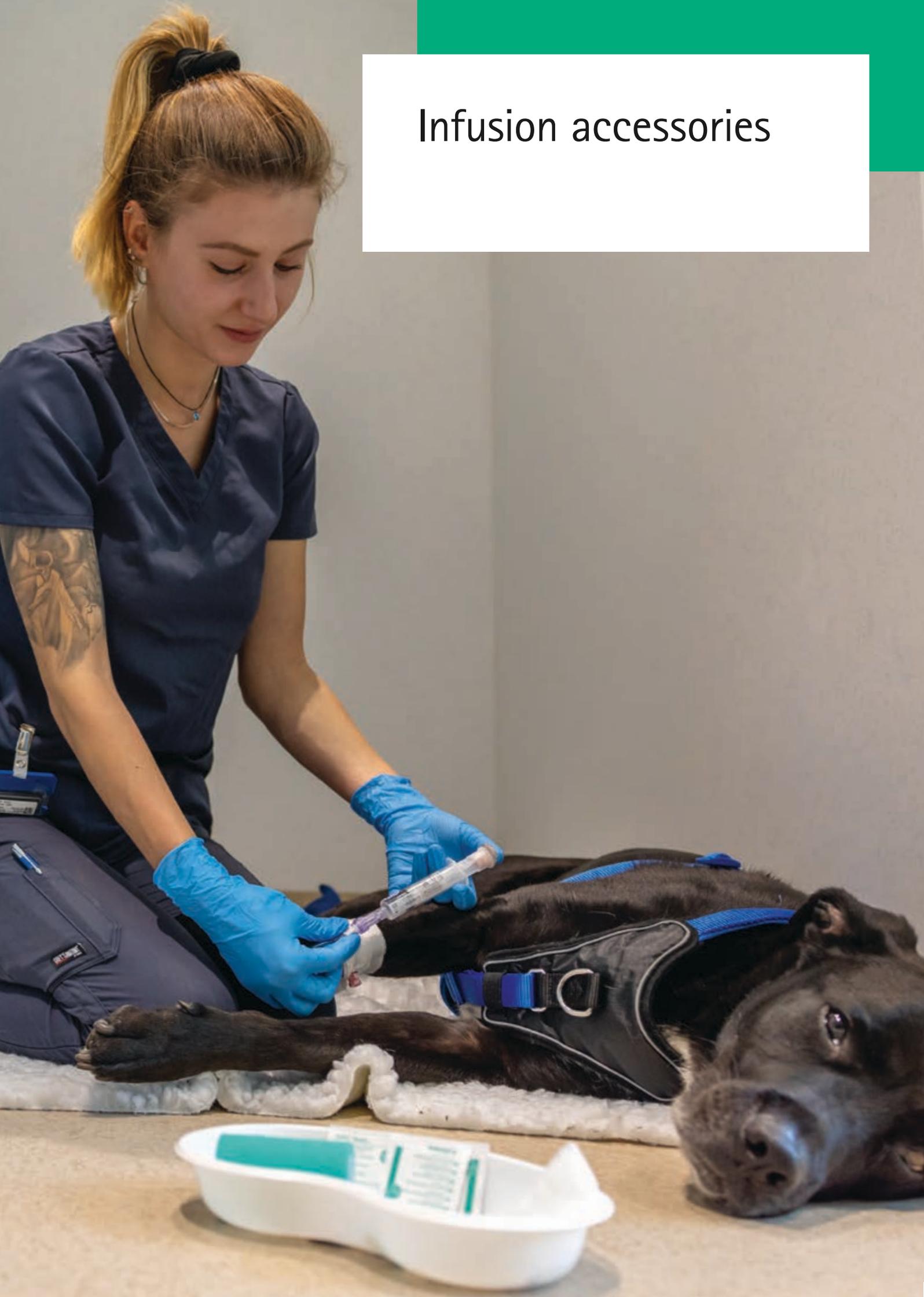| Product	Sales unit
NuTRIflex® Lipid peri novo	5 x 1250 mL
NuTRIflex® Lipid peri novo KP	5 x 1250 mL
NuTRIflex® Lipid peri novo	5 x 1875 mL
NuTRIflex® Lipid peri novo KP	5 x 1875 mL
NuTRIflex® Lipid peri novo	5 x 2500 mL

Ask your local contact for availability

Mandatory product texts at the end of the brochure

Infusion accessories

Infusion accessories

Caresite®

Needle-free membrane valve for infusion therapy

- Opens upon connection and closes upon disconnection
- Positive rinsing volume
- Suitable for use in infusion therapy: for aspiration or injection of liquids; in cytostatic therapy; to allow blood withdrawal
- Oil-proof
- Flow rate: 208 mL/min
- Filling volume: 0.22 mL
- Pressure resistance: up to 20.68 bar
- Luer Lock connectors
- Latex-, PVC- and DEHP-free

Type	Sales unit	Art. no.
Caresite®	10 pcs	415122-01

Caresite® with extension line

Membrane valve with extension line for safe, comfortable infusion therapy access

- Allows quick access to the infusion system
- Available as extension line with Caresite® valve or as Y line with two Caresite® valves
- Opens upon syringe connection and closes upon disconnection, so no need to close with closure cap
- No blood leakage from catheter during infusion replacement or disconnection
- Positive closure pressure: helps prevent catheter occlusion
- Smooth valve surface allows easy wipe-off disinfection
- Number of connections to valve: at least 200x
- Visible fluid channel: Blood and solution residues can be seen and prevented by rinsing
- Compatible with Luer lock and Luer slip connectors
- Latex-, PVC- and DEHP-free

Approx. length	Inner diameter	Sales unit	Art. no.
20 cm	1.3 mm	100 pcs	470100-01
15 cm	2.8 mm	100 pcs	470108-01
With 2 Caresite® valves, length: 18 cm	1.3 mm	100 pcs	470106-01

SwabCap® ensures hygiene

On needle-free diaphragm valves

The SwabCap® is a disinfection cap with a particle-free sponge soaked in 70% isopropyl alcohol (IPA). It is designed as a physical barrier to protect needle-free membrane valves, and also serves as a disinfecting cleaner to prevent microbial contamination.

To disinfect, screw the SwabCap® directly onto the membrane valve; it can remain there for up to 7 days, until the next time the port is accessed. The membrane surface is completely disinfected within five minutes after the disinfection cap is screwed on.[1] After the SwabCap® has been disconnected, the IV port can be used immediately. Numerous studies confirm the efficiency of the SwabCap®.[2-8]
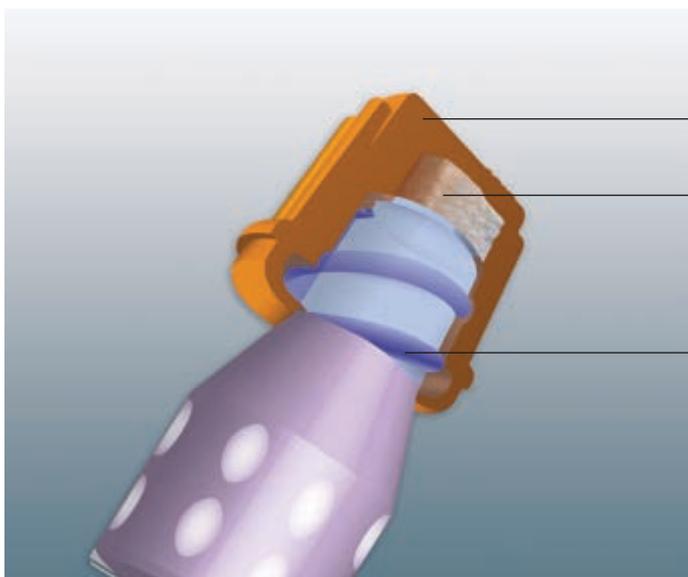
Cap

Particle-free sponge
soaked in 70% IPA

Thread surrounded
with 70% IPA

Advantages

- Protection against microbial contamination
- Easy disinfection technique helps save time and standardize processes
- Supports internal clinical hygiene measures
- Quick visual identification of the disinfected membrane valve
- Sterile packaging of SwabCap® allows touchless, aseptic connection with the membrane valve

1. Moureau N. Passive disinfection / protection cap effectively disinfects swabbable luer access valves / needleless connectors. Poster session presented at the 2010 annual meeting of the Association for Vascular Access (AVA), National Harbor, MD.; 2. Michelle DeVries et al., Reducing bloodstream infection risk in central and peripheral intravenous lines: initial data on passive intravenous connector disinfection. Journal of Vascular Access, Volume 19, No. 2: 87-93, 2014.; 3. Marc-Oliver Wright MT (ASCP) et al., Continuous passive disinfection of catheter hubs prevents contamination and bloodstream infection. American Journal of Infection Control, Volume 41, No. 1: 33-38, 2013.; 4. Cap the Connector: Save the Patient by Dr. Gregory Schears. Poster presented at AVA 2011, 25th Annual Scientific Meeting.; 5. Use of disinfecting cap / flush syringe combination to address bloodstream infection and related issues by Hector Contreras. Poster presented at AVA 2012, Annual Scientific Meeting.; 6. Integrated delivery system of disinfection cap and flush syringe, plus staff education, reduce bloodstream infections and treatment costs by Saungi McCalla Poster presented at AVA 2012, Annual Scientific Meeting.; 7. It takes a village to prevent central venous catheter infections and promote safety of patients by Barbara Bor. Poster presented at AVA 2012, Annual Scientific Meeting.; 8. Improving IV connector disinfection by using human factors engineering to identify e ective, nurse-friendly solutions by Patricia Rosa. Poster presented at APIC, 40th Annual Conference.

SwabCap® ensures hygiene

On needle-free diaphragm valves

Type	Sales unit	Art. no.
SwabCap® Disinfection cap with 70% isopropyl alcohol (IPA)	200 pcs	EM-SCXT3

Infusion accessories

Heidelberg extenders

Extender lines for infusion systems

- With Luer lock connectors
- Pressure resistance: up to 2 bar
- Available in lengths up to 550 cm
- Latex- and DEHP-free

Approx. length	Volume	Outer diameter	Inner diameter		Sales unit	Art. no.
30 cm	2.1 mL	4.1 mm	3 mm		100 pcs	4097300
75 cm	5.3 mL	4.1 mm	3 mm		100 pcs	4097173
100 cm	7.1 mL	4.1 mm	3 mm		100 pcs	4097262

Connection line

Allows comfortable connection with reduced residual volumes

- With Luer lock connectors
- Pressure resistance of Luer lock variants: up to 2 bar
- Special features of art. no. 4256000: Luer slip connector
- Latex- and DEHP-free, some versions also PVC-free

Individually packaged sterile

Approx. length	Volume	Outer diameter	Inner diameter		Sales unit	Art. no.
With Luer plug connector						
30 cm	0.4 mL	2.2 mm	1.2 mm		50 pcs	4256000
With Luer lock connector						
150 cm	0.5 mL	2.35 mm	0.5 mm	O	100 pcs	4093054
30 cm	0.45 mL	2.35 mm	1 mm	O	100 pcs	4093402

O PVC-free

Additional lengths available for delivery

Infusion accessories

Spiral lines
Extensions and connections in infusion therapy

- With Luer lock connectors
- Pressure resistance: up to 2 bar
- Easy extension of infusion lines allow comfortable infusion therapy with more freedom of movement for patient and staff
- Clear, flexible line guidance
- Good resettability
- PVC-free

Individually packaged sterile

Approx. length	Volume	Outer diameter	Inner diameter	Sales unit	Art. no.
150 cm	4.71 mL	3.2 mm	2 mm	50 pcs	4090365
300 cm	9.42 mL	3.2 mm	2 mm	50 pcs	4090373
500 cm	15.7 mL	3.2 mm	2 mm	50 pcs	4090438
700 cm	21.98 mL	3.2 mm	2 mm	50 pcs	4090381
850 cm	26.69 mL	3.2 mm	2 mm	50 pcs	4090390

LS-2 connector
For applying multiple infusions via a single port

- With Luer lock connectors
- Pressure resistance: up to 2 bar
- Also available with integrated check valves
- Latex- and DEHP-free

Individually packaged sterile

Type / approx. length	Outer diameter	Inner diameter	Sales unit	Art. no.
With flexible tube components	4.1 mm	3.0 mm	100 pcs	4097122
With check valves	4.1 mm	3.0 mm	50 pcs	4093038

LS-4 connector

For applying multiple infusions via a single port

- For flexible connection and extension of up to
  four infusion devices using flexible tube components
- With Luer lock connectors
- Roller clamp to regulate flow rate
- Pressure resistance: up to 2 bar
- Latex- and DEHP-free

Individually packaged sterile

Type	Outer diameter	Inner diameter	Sales unit	Art. no.
With flexible tube components and roller clamp	4.1 mm	3.0 mm	50 pcs	4097149

LS-5 connector

For applying multiple infusions via a single port

- For connecting and extending up to four infusion devices along
  with an injection port (IN stopper) for additional injections
- With Luer lock connectors
- Roller clamp to regulate flow rate
- Latex- and DEHP-free

Individually packaged sterile

Type	Outer diameter	Inner diameter	Sales unit	Art. no.
With IN stopper for injections and roller clamp	4.1 mm	3.0 mm	100 pcs	4097157

Infusion accessories

Infuvalve®

Check valve for connection to infusion systems

- Prevents reflux of solution into the gravity infusion line when performing parallel infusions using pressure and gravity
- Prevents blood reflux, e.g., from existing vascular port into infusion line.
- Luer Lock connectors
- Latex-, PVC- and DEHP-free

Type	Sales unit	Art. no.
Check valve	50 pcs	4094000N

IN stopper

Allows needle-based injection through injection membrane

- Smooth, contamination-resistant surface
- Contact-free Luer wedge
- Headspace: 0.16 mL
- Color: yellow
- Latex-, PVC- and DEHP-free

Color	Sales unit	Art. no.
Yellow	100 pcs	4238010

Combination stopper-locking cones

Male and female Luer locks

- Ensures locking of all female and male Luer connections
- Sterile locking of all types of connectors to the infusion set
- Secure locking of pre-filled syringes
- Polyethylene (PE)
- Available in red, blue or white
- Latex-, PVC- and DEHP-free

Color	Sales unit	Art. no.
Red	100 pcs	4495101
Blue	100 pcs	4495152
White	100 pcs	4495209
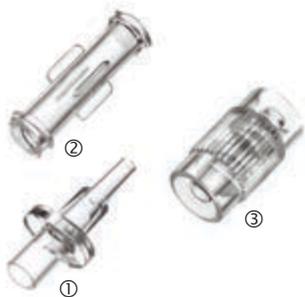
Combifix® Adapter

For connecting the same or different connectors

- Versions:
  - Female-female Luer lock
  - Male-male Luer lock
  - Female Luer – male Record
- Latex-, PVC- and DEHP-free

Type	Color	Sales unit	Art. no.
① Female Luer – male Record	Transparent	100 pcs	4090306
② Female-female Luer lock	Transparent	100 pcs	5206634
③ Male-male Luer lock	Transparent	100 pcs	5206642

Infusion accessories

Mounting systems

For glass bottles

- Metal multi-container mount: Stainless steel
- For glass bottles

Type	Sales unit	Art. no.
Multi-mount	1 pc	3977170

Discofix® combo mount

For mounting stopcock system and CVP measuring block

- Allows horizontal or vertical insertion
- Steam-sterilizable plastic
- V2A steel screws
- PVC-free

Product	Sales unit	Art. no.
Discofix® combo mount	1 pc	4086007

Infusion accessories

Stopcock systems – drug-resistant

Discofix® C three-way valves

Multi-way stopcock systems for infusion therapy and monitoring,
100 % pharmaceutical-resistant

- For application of medications and pharmaceutical agents such as anesthetics, cytostatics, antibiotics, narcoleptics, immunosuppressants, and lipids
- Prevents stress fractures in material
- Reliable connection holds even with long-term use
- Rotation adapter allows easy access for injections or aspirations
- Unintentional loosening of cap nut is prevented
- Clicks into place to confirm 45° position
- Pressure resistance: up to 2 bar
- Latex-, PVC- and DEHP-free

Color	Sales unit	Art. no.
Blue	100 pcs	16494C

Discofix® C three-way valves with connection line

Multi-way stopcock systems for infusion therapy and monitoring,
100 % pharmaceutical-resistant

- For application of medications and pharmaceutical agents such as anesthetics, cytostatics, antibiotics, narcoleptics, immunosuppressants, and lipids
- Prevents leaks due to tension cracks, contamination, and air embolisms
- Reliable connection holds even with long-term use
- Rotation adapter allows easy access for injections or aspirations
- Unintentional loosening of cap nut is prevented
- Clicks into place to confirm 45° position
- Pressure resistance: up to 2 bar
- Latex-, PVC- and DEHP-free

Color	Leader	Sales unit	Art. no.
Blue	10 cm tube	50 pcs	16500C
Blue	25 cm tube	50 pcs	16520C
Blue	50 cm tube	50 pcs	16540C
Blue	75 cm tube	10 pcs	16551C
Blue	100 cm tube	50 pcs	16560C

Infusion accessories

Stopcock systems – drug-resistant

Discofix® C 3-way stopcock

Stopcock systems for infusion therapy and monitoring,
100 % pharmaceutical-resistant

- For application of medications and pharmaceutical agents such as anesthetics, cytostatics, antibiotics, narcoleptics, immunosuppressants, and lipids
- Prevents stress fractures in material
- Rotation adapter allows easy access for injections or aspirations
- Clicks into place to confirm 45° position
- For more flexibility through connection line
- Pressure resistance: up to 2 bar
- PVC- and DEHP-free

Color	Sales unit	Art. no.
Blue	50 pcs	16605C
Multicolored	50 pcs	16600C

Discofix® C 3-way stopcock with connection line

Stopcock systems for infusion therapy and monitoring,
100 % pharmaceutical-resistant

- For application of medications and pharmaceutical agents such as anesthetics, cytostatics, antibiotics, narcoleptics, immunosuppressants, and lipids
- Prevents stress fractures in material
- Rotation adapter allows easy access for injections or aspirations
- Clicks into place to confirm 45° position
- Pressure resistance: up to 2 bar
- PVC- and DEHP-free

Color	Leader	Sales unit	Art. no.
Multicolored	180 cm tube + 3-way stopcock	50 pcs	16611C

Discofix® C 5-way stopcock

Stopcock systems for infusion therapy and monitoring,
100 % pharmaceutical-resistant

- For application of medications and pharmaceutical agents such as anesthetics, cytostatics, antibiotics, narcoleptics, immunosuppressants, and lipids
- Prevents stress fractures in material
- Rotation adapter allows easy access for injections or aspirations
- Clicks into place to confirm 45° position
- Pressure resistance: up to 2 bar
- PVC- and DEHP-free

Color	Sales unit	Art. no.
Blue	40 pcs	16609C
Multicolored	40 pcs	16608C

Discofix® C 5-way stopcock with connection line

Stopcock systems for infusion therapy and monitoring,
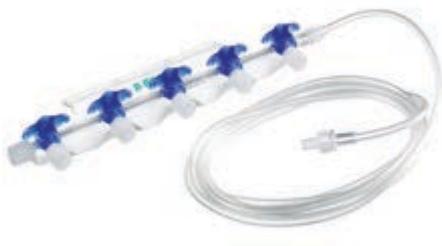100 % pharmaceutical-resistant

- For application of medications and pharmaceutical agents such as anesthetics, cytostatics, antibiotics, narcoleptics, immunosuppressants, and lipids
- Prevents stress fractures in material
- Rotation adapter allows easy access for injections or aspirations
- Clicks into place to confirm 45° position
- For more flexibility through connection line
- Pressure resistance: up to 2 bar
- PVC- and DEHP-free

Color	Leader	Sales unit	Art. no.
Blue	150 cm tube	40 pcs	16612C
Blue	150 cm tube + Discofix® C	40 pcs	16613C
Blue	180 cm tube + Discofix® C	40 pcs	16614C

Infusion accessories

Stopcock systems – drug-resistant

Discofix® C with Safeflow

Three-way stopcock with integrated, needle-free membrane valve

- Combines the advantages of Discofix® C and Safeflow
- Closed, pharmaceutical-resistant system
- Reliable connection thanks to ability to rotate the three-way stopcock around its own axis
- With click mechanism - user can feel it click into place; exact positioning of the plug at a 45° angle
- Smooth surface of the Safeflow allows efficient disinfection for better hygiene
- The flush Safeflow membrane makes the use of protective caps unnecessary

Color	Sales unit	Art. no.
Blue	100 pcs	16494CSF

Discofix® C with Safeflow and extension lines

Three-way stopcock with integrated, needle-free membrane valve

- Combines the advantages of Discofix® C and Safeflow
- Closed, pharmaceutical-resistant system
- Reliable connection thanks to ability to rotate the three-way stopcock around its own axis
- With click mechanism - user can feel it click into place; exact positioning of the plug at a 45° angle
- Smooth surface of the Safeflow allows efficient disinfection for better hygiene
- The flush Safeflow membrane makes the use of protective caps unnecessary

Color	Leader	Outer diameter	Inner diameter	Sales unit	Art. no.
Blue	10 cm	4.1 mm	2.5 mm	50 pcs	16500CSF
Blue	25 cm	4.1 mm	2.5 mm	50 pcs	16520CSF
Blue	50 cm	4.1 mm	2.5 mm	50 pcs	16540CSF
Blue	75 cm	4.1 mm	2.5 mm	50 pcs	16551CSF
Blue	100 cm	4.1 mm	2.5 mm	50 pcs	16560CSF

Infusion accessories

Multi-way stopcock systems – basic infusion therapy

Discofix® three-way valves

Multi-way stopcock systems for infusion therapy and monitoring

- Suitable for all pressure infusion systems used in infusion therapy
- Flow holes ensure accurate pressure readings
- Axially and radially mobile cap nuts allow safe, fast connection
- Pressure resistance: up to 2 bar
- Latex-, PVC- and DEHP-free

Color	Sales unit	Art. no.
Blue	50 pcs	4095111
Red	50 pcs	4095120
White	50 pcs	4095146

Discofix® three-way valves with connection line

Multi-way stopcock systems for infusion therapy and monitoring

- Suitable for all pressure infusion systems used in infusion therapy
- Flow holes ensure accurate pressure readings
- Axially and radially mobile cap nuts allow safe, fast connection
- Pressure resistance: up to 2 bar
- Latex- and DEHP-free

Color	Leader	Outer diameter	Inner diameter	Sales unit	Art. no.
Blue	10 cm tube	4.1 mm	2 mm	50 pcs	4098102
Blue	25 cm tube	4.1 mm	2 mm	50 pcs	4098218
Blue	50 cm tube	4.1 mm	2 mm	50 pcs	4098501

Additional lengths available for delivery

Injection accessories

Clinical needs

Medibox®

Waste container for disposing of sharp, pointed objects of the medical environment

- Breakage-resistant, puncture-resistant and stable when used as intended in accordance with the specifications of DIN EN ISO 23907
- For disposal of cannulae with Luer or Luer lock connectors and pen cannulae
- Large opening for disposal of various sharp, pointed medical instruments
- Lid engages easily in the open position and remains open
- Can be temporarily locked with one hand
- Permanently lockable by pressing on the indicated pressure points on the box lids
- Permanent locking can be heard and felt
- Maximum fill level marked on the lid or directly on the box
- Autoclavable at 134° for up to 18 minutes
- Certified according to ISO 23907, ADR and 2008/68/EC
- Fulfills requirements for waste disposal containers as per TRBA 250

Height	Sales unit	Art. no.
Medibox® 2.4 L	10 pcs	9193600
Medibox® 4.7 L	1 pc	9193618
Medibox® 5.7 L	1 pc	9193627
Medibox® 6.8 L	1 pc	9193639
Medibox® 9.1 L	1 pc	9193640

Defix®

Single-use kidney dish

- Polystyrene
- Contains 100 pc per package

Type	Sales unit	Art. no.
Defix®	100 pcs	5385200

Oncology

Puresite®

Transfer product for safe admixture and administration
of toxic pharmaceuticals

- Closed connector (male)
- Needle-free technology
- Permanent connection to a Luer lock syringe or an infusion device
- Automatic closing function offers additional protection against chemical
  and microbial contamination
- 0.1 mL residual volume
- Latex-, PVC- and DEHP-free

Type	Sales unit	Art. no.
Puresite®	100 pcs	4551105

Dust Cover Cap – Puresite®

Dust Cover Cap

- Sealing cap specially designed fro Puresite®
- Allows safe medication transport
- Latex-, PVC- and DEHP-free

Type	Sales unit	Art. no.
Dust Cover Cap	50 pcs	4551101

Mini-Spike® 2 Chemo

Withdrawal and injection spike for multiple-withdrawal containers
with integrated safe-flow valve

- With integrated 0.2 µm ventilation filter to protect against aerosols
- With integrated 5 µm particle filter that traps particles > 5 µm
- With integrated, needle-free safe-flow valve
- Easy to disinfect exposed valve
- Valve opens when Luer lock or Luer slip syringe is connected,
  and automatically closes when used syringe is disconnected
- Integrated valve allows no-drip withdrawal overhead
- Avoids leaks
- Protection against toxic aerosols when preparing cytostatic solutions,
  reduced risk of contamination

Type	Sales unit	Art. no.
Mini-Spike® 2 Chemo	50 pcs	4550592

Cyto-Set®

Closed system for additional safety in every step of the preparation process

Piercing and de-airing
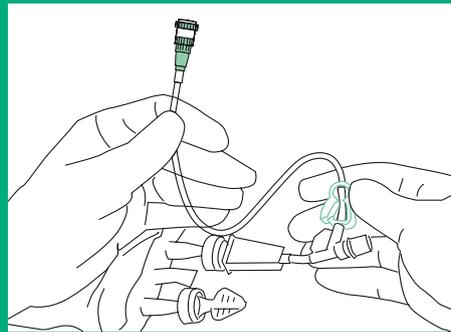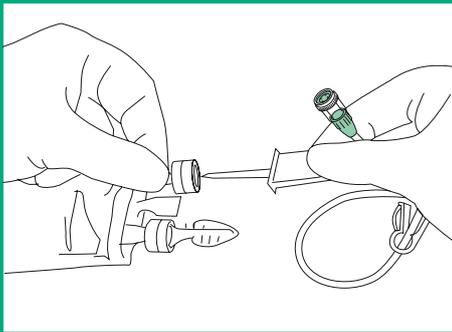
1. Remove the protective cap from the piercing spike.

2. Pierce the spike into the admixture port of the container and de-air the line. The PrimeStop cap at the end of the line prevents liquid from leaking out.

3. Slide the Cyto-Set® Mix clamp next to the syringe valve and close it.

Filling the container with cytostatics
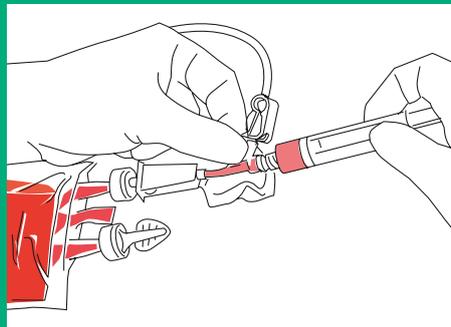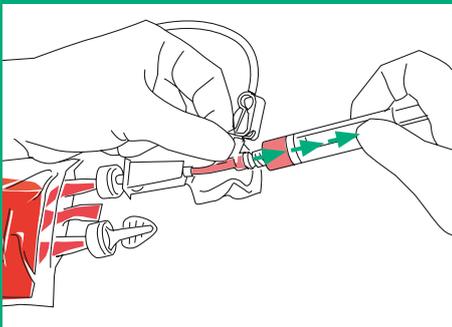
1. Remove the green cap from the injection valve.

2. Connect the filled syringe by twisting the injection valve. It will open automatically.

3. Inject the medication into the container.

4. Mix the cytostatics by drawing up the syringe several times in order to ensure optimum blending with the carrier solution.

5. Remove the syringe from the injection valve, which will close automatically.

Oncology

Cyto-Set® Mix

Needle-free PVC-/DEHP-free secondary line for admixture of cytostatics

- Grip plate with crack-resistant injection valve
- Rotating Luer lock connector allows fast and comfortable connection without twisting the line; audible click signals initial connection of the Cyto-Set® Mix to the valve of the application line.
- PrimeStop cap allows drip-free de-airing of the line

1 The Luer Lock rotation adapter

Audible click on connection to the infusion line grip plate. Confirmation of the first use of the Cyto-Set® Mix and Cyto-Set® Line.

2 The PrimeStop cap

Drip-free ventilation of the line. The system remains closed until it is connected to the infusion line.

3 The grip plate with valve

Better hold during admixture; crack-resistant material; reduced contamination risk from potential stress cracks. Increased user safety at the pharmacy.

4 The spike/Luer lock connector

Firm grip on the container infusion port reduces cytostatic leaks.
Reduced risk of contamination on the way from the pharmacy to the ward.

Type	Sales unit	Art. no.
Cyto-Set® Mix, 1 needle-free valve	20 pcs	A2900N
Cyto-Set® Infusion w/ 3 NF valves	20 pcs	A1687
Cyto-Set® infusion, 2+1 valves, AirStop	20 pcs	A1688

Oncology

ProSet® Intrafix®
Flushing with Caresite®

- Needle-free, PVC/DEHP-free secondary line for administering concomitant medications and prepared cytotoxic drug solutions
- Rotating Luer lock connector allows safe, comfortable connection without twisting the line; audible click signals initial connection of the Cyto-Set® Mix to the valve of the application line.
- PrimeStop cap allows drip-free de-airing of the line
- The ventilation flap on the spike with integrated filter and automatic ventilation valve helps to prevent liquid from escaping.

Type	Sales unit	Art. no.
ProSet® Intrafix® Flushing with Caresite®	25 pcs	4110000

Mandatory texts

Aminoplasmal® B. Braun

Composition: 1000 mL infusion solution contains:

	Aminoplasmal 5 % E	Aminoplasmal 10 % E	Aminoplasmal 10 %
Amino acids:			
Isoleucine	2.50 g	5.00 g	5.00 g
Leucine	4.45 g	8.90 g	8.90 g
Lycine acetate	–	–	5.74 g
≙ Lysine	–	–	4.07 g
Lysine hydrochloride	4.28 g	8.56 g	–
≙ Lysine	3.43 g	6.85 g	–
Lysine monohydrate	–	–	3.12 g
≙ Lysine	–	–	2.78 g
Methionine	2.20 g	4.40 g	4.40 g
Phenylalanine	2.35 g	4.70 g	4.70 g
Threonine	2.10 g	4.20 g	4.20 g
Tryptophan	0.80 g	1.60 g	1.60 g
Valine	3.10 g	6.20 g	6.20 g
Arginine	5.75 g	11.50 g	11.50 g
Histidine	1.50 g	3.00 g	3.00 g
Alanine	5.25 g	10.50 g	10.50 g
Glycine	6.00 g	12.00 g	12.00 g
Aspartic acid	2.80 g	5.60 g	5.60 g
Glutamic acid	3.60 g	7.20 g	7.20 g
Proline	2.75 g	5.50 g	5.50 g
Serine	1.15 g	2.30 g	2.30 g
Tyrosine	0.40 g	0.40 g	0.40 g
Electrolytes:			
Sodium acetate trihydrate	1.361 g	2.858 g	–
Sodium chloride	0.964 g	–	–
Sodium hydroxide	0.14 g	0.360 g	–
Potassium acetate	2.453 g	2.453 g	–
Magnesium chloride hexahydrate	0.508 g	0.508 g	–
Sodium monohydrogen phosphate dodecahydrate	3.581 g	3.581 g	–
Amino acid content	50 g/l	100 g/l	100 g/l
Total nitrogen content	7.9 g/l	15.8 g/l	15.8 g/l
Total energy (kJ/kcal)	835/200	1675/400	1675/400
Theor. Osmolarity (mOsm/L)	588	1021	864
Titration acidity (pH 7.4) (mmol/l)	approx. 17	approx. 26	approx. 20
pH value:	5.7–6.3	5.7–6.3	5.7–6.3
Electrolyte concentrations: mmol/l			
Sodium	50	50	–
Potassium	25	25	–
Magnesium	2.5	2.5	–
Acetate	35	46	28
Chloride	45	52	–
Phosphate	10	10	–
Citrate	2.0	2.0	2.0

Excipients: acetylcysteine; citric acid monohydrate (for pH adjustment); water for injection Applications: Administering amino acids and limited amounts of electrolytes as part of parenteral nutrition when oral or enteral feeding is not possible, inadequate, or contraindicated. For adults, adolescents and children aged 2 and up.

Contraindications: Hypersensitivity to the active ingredients or any of the excipients listed in section 6.1; congenital amino acid metabolic disorders; severe circulatory impairment with vital threat (e.g., shock); hypoxia; metabolic acidosis; severe hepatic insufficiency; severe renal insufficiency without renal replacement therapy; uncorrected high plasma levels of one of the electrolytes the product contains; decompensated heart failure; acute pulmonary edema; hyperhydration. This product must not be used on newborns, infants or small children under the age of 2, because its amino acid composition does not sufficiently meet the specific needs of that age group.

Special warnings and precautions for use: This medicinal product should only be used for congenital amino acid metabolic disorders after a careful risk-benefit assessment. Exercise caution when infusing larger volumes of fluid in patients with heart failure. Exercise caution in patients with elevated serum osmolarity. Fluid and electrolyte imbalances (e.g. hypotonic dehydration, hyponatremia, hypokalemia) must be corrected prior to parenteral nutrition. Serum electrolytes, blood glucose, fluid balance, acid-base balance and kidney function must be checked regularly. Serum protein and liver function checks are also required. *Reduced renal function* in patients with renal insufficiency, adjust dosage carefully depending on individual needs, severity of organ insufficiency, and type of renal replacement therapy initiated (hemodialysis, hemofiltration, etc.). *Hepatic impairment* In patients with hepatic insufficiency, adjust dose carefully depending on individual needs and severity of organ insufficiency. Amino acid solutions are only one component of parenteral nutrition. Complete parenteral nutrition requires simultaneous substitution with protein-free energy carriers, essential fatty acids, electrolytes, vitamins, fluids, and trace elements. Infusion into peripheral veins could result in thrombophlebitis. As such, monitor the infusion site daily for signs of thrombophlebitis.

Fertility, pregnancy and lactation: *Pregnancy* No experiential data is currently available regarding the use of Aminoplasmal B. Braun during pregnancy. No animal reproduction experiments with Aminoplasmal B. Braun were performed. If necessary, use of Aminoplasmal B. Braun may be considered during pregnancy. Aminoplasmal B. Braun should only be used with pregnant patients following careful consideration. *Breastfeeding* Amino acids/metabolites are excreted through breast milk, but no effects on breastfeeding newborns/children are expected at therapeutic doses of Aminoplasmal B. Braun. However, breastfeeding is not recommended for mothers receiving parenteral nutrition. *Fertility* No data available.

Side effects: Side effects may occur especially at the beginning of parenteral nutrition; these side effects are generally expected with parenteral nutrition, rather than specific to this product. Adverse reactions are listed by frequency of occurrence as follows: Very common (≥ 1/10); Common (≥ 1/100 to < 1/10), Occasional (≥ 1/1,000 to < 1/100), Rare (≥ 1/10,000 to < 1/1,000), Very rare (< 1/10,000). Unknown: (Frequency cannot be estimated from the available data) Immune system disorders Unknown: Allergic reactions, gastrointestinal diseases; Occasional: Nausea, generalized conditions and symptoms at the administration site; Unknown: Local infusion site reactions including local pain, venous irritation and occasional thrombophlebitis.

Reporting suspected side effects: Reporting suspected side effects following approval is of great importance. It allows ongoing monitoring of the pharmaceutical's risk-benefit profile. Healthcare professionals are requested to report any suspected incidents of adverse effects to the German Institute of Pharmaceuticals and Medical Products, Pharmacovigilance Dept., Kurt-Georg-Kiesinger Allee 3, 53175 Bonn, website: www.bfarm.de.

Prescription required. Version date: October 2017.

Pharmaceutical manufacturer: B. Braun Melsungen AG, 34212 Melsungen

Aminoplasmal® Paed 10 %

Composition: 1 mL of the infusion solution contains: 5.10 mg isoleucine; 7.60 mg leucine; 8.80 mg lysine; 2.00 mg methionine; 3.10 mg phenylalanine; 5.10 mg threonine; 4.00 mg tryptophan; 6.10 mg valine; 9.10 mg arginine; 4.60 mg histidine; 15.90 mg alanine; 2.00 mg glycine; 6.60 mg aspartic acid; 9.30 mg glutamic acid; 6.10 mg proline; 2.00 mg serine; 1.06 mg tyrosine; 0.520 mg cysteine; 0.300 mg taurine. Amino acid content: 0.1 g; nitrogen content: 0.0152 g. Energy [kJ/l (kcal/l)]: 1,700 (400); Theoretical osmolarity [mOsm/l]: 790. List of excipients: Citric acid – monohydrate (for pH adjustment) Water for injection purposes.

Indications: Administering amino acids as part of parenteral nutrition in combination with energy (glucose and lipids) and electrolyte-containing solutions where oral or enteral nutrition is not possible, inadequate, or contraindicated. The solution is used for neonates and premature neonates, infants, toddlers, and children. *Type of application:* intravenous application. For central venous infusion only.

Contraindications: Hypersensitivity to the active substances or to any of the excipients; congenital disorders related to amino acid metabolism; severe circulatory impairment with vital threat (e.g. shock); hypoxia; metabolic acidosis; severe hepatic insufficiency; severe renal insufficiency without renal replacement therapy; decompensated heart failure; acute pulmonary edema; electrolyte and fluid imbalances.

Fertility, pregnancy, and breastfeeding: Aminoplasmal Paed 10% is intended exclusively for use in children (under 12 years of age).

Side effects: Side effects may occur especially at the beginning of parenteral nutrition; these side effects are generally expected with parenteral nutrition, rather than specific to this product. Adverse reactions are listed by frequency of occurrence as follows: Very common (≥ 1/10); Common (≥ 1/100, < 1/10); Occasional (≥ 1/1,000, < 1/100); Rare (≥ 1/10,000, < 1/1,000), Very rare (< 1/10,000); Unknown (frequency cannot be estimated from the available data) Immune system disorders: Unknown: Allergic reactions; gastrointestinal disorders Occasionally: Nausea, vomiting.

Reporting suspected side effects: Reporting suspected side effects following approval is of great importance. It allows ongoing monitoring of the pharmaceutical's risk-benefit profile. Healthcare professionals are requested to report any suspected incidents of adverse effects to the German Institute of Pharmaceuticals and Medical Products, Pharmacovigilance Dept., Kurt-Georg-Kiesinger Allee 3, 53175 Bonn, website: www.bfarm.de.

Prescription required. Version date: November 2019.

Pharmaceutical manufacturer: B. Braun Melsungen AG, 34212 Melsungen

Lipofundin® MCT 10% | Lipofundin® MCT 20% Infusion emulsion

Composition: Lipofundin® MCT 10%/Lipofundin® MCT 20%: 1000 mL infusion emulsion contains: Soybean oil, refined: 50.0 g/100.0 g, medium-chain triglycerides (MCT): 50.0 g/100.0 g. Essential fatty acid content per 1000 mL: Linoleic acid: 24.0–29.0 g/48.0–58.0 g, α-linolenic acid: 2.5–5.5 g/5.0–11.0 g. Energy [kJ/l (kcal/l)]: 4330 (1035)/8095 (1935), theoretical osmolarity: 345 mOsm/l/380 mOsm/l, acidity or alkalinity (titration to pH 7.4) < 0.5 mmol/l, pH 6.5-8.8/6.5-8.5. *Other ingredients:* Glycerol: 25.0 g/l. phospholipids from egg 8 g/12 g corresponding to (3-sn-phosphatidyl)choline 4.8 g/7.2 g (egg lecithin 8.0 g/l/12.0 g/l), all-rac-α-tocopherol: 85/170 (± 20/40) mg/l, sodium oleate (for pH adjustment), water for injection purposes.

Indications: Lipofundin® MCT 10%/Lipofundin® MCT 20%: Calorie substitution with rapidly usable fat component (MCT), supply of essential fatty acids as part of a fully parenteral diet.

Type of application: For intravenous use.

Contraindications: Lipofundin® MCT 10%/Lipofundin® MCT 20%: Hypersensitivity to egg or soy protein, soybean or peanut products or to any of the active substances or ingredients listed under excipients. Severe hyperlipidaemia, severe coagulation disorders, severe hepatic insufficiency, intrahepatic cholestasis, severe renal insufficiency without renal replacement therapy, acute thromboembolic events, fat embolism, worsening hemorrhagic diatheses, metabolic acidosis. General contraindications to parenteral nutrition: Unstable circulatory status with vital threat (states of shock or collapse), unstable metabolic status (e.g. severe post-aggression syndrome, severe sepsis, coma of unknown cause), acute phase of myocardial infarction or stroke, untreated fluid and electrolyte imbalances such as hypokalemia or hypotonic dehydration, decompensated heart failure, acute pulmonary edema.

Fertility, pregnancy, and breastfeeding: Lipofundin® MCT 10%/Lipofundin® MCT 20%: Pregnancy: Little to no experiential data is available on the use of Lipofundin® MCT during pregnancy. No sufficient animal studies on reproductive toxicity have been performed. Parenteral nutrition may be required during pregnancy. Lipofundin® MCT should only be administered during pregnancy following a careful risk-benefit assessment. Breastfeeding: Components/metabolites of Lipofundin® MCT are excreted in breast milk, but no effects on the breastfeeding infant are expected at therapeutic doses. In general, breastfeeding is not recommended for mothers receiving parenteral nutrition. Fertility: No human data is available. Animal studies showed no evidence of effects on fertility.

Side effects: Lipofundin® MCT 10%/Lipofundin® MCT 20%: The following list contains a number of systemic side effects that may occur in conjunction with the use of Lipofundin® MCT. When used correctly in terms of dosage, monitoring, adherence to safety restrictions and instructions, most of these occur very rarely (<1/10,000). Blood and lymphatic system disorders *Very rare:* Hypercoagulability, *Unknown* Leukopenia, thrombocytopenia; immune system disorders Very rare: Allergic reactions (eg. anaphylactic reactions, skin rashes, laryngeal, oral and facial edema); metabolic and nutritional disorders Very rare: Hyperlipidemia, hyperglycemia, metabolic acidosis, ketoacidosis, the frequency of these side effects is dose-dependent and may be higher under conditions of absolute or relative overdose; Nervous system disorders *Very rare:* Headache, dizziness; Vascular diseases *Very rare:* Hypertension or hypotension, flush; Respiratory, thoracic and mediastinal disorders *Very rare:* Dyspnea, cyanosis; Gastrointestinal diseases *Very rare:* Nausea, vomiting, loss of appetite; Liver and bile diseases *Unknown:* Cholestasis; Skin and subcutaneous tissue disorders *Very rare:* Erythema, sweating; skeletal musculature, connective tissue and bone diseases *Very rare:* Pain in the back, bones, chest and lumbar area; General disorders and administration site conditions *Very rare:* Increased body temperature, cold chills, fat overload syndrome (see below). If side effects occur, stop infusion of Lipofundin® MCT or, if necessary, continue with reduced dose. When resuming infusion, monitor the patient carefully, especially at the beginning, and check serum triglycerides levels at short intervals. Information on certain side effects: Nausea, vomiting, loss of appetite and hyperglycemia are symptoms of diseases that are indications for parenteral nutrition. However, they may also be associated with parenteral nutrition itself. Fat overload syndrome: Overdosing of a fat emulsion or reduced ability to eliminate triglycerides can lead to "fat overload syndrome." Monitor for any possible signs of metabolic overload. This syndrome may be the result of genetic predisposition (individual metabolic differences) or fat metabolism impairment due to current or previous diseases. This syndrome may also occur in the presence of severe hypertriglyceridemia at the recommended infusion rate; it has also been associated with sudden change in the patient's clinical condition, e.g. with renal impairment or infection. Fat overload syndrome is characterized by hyperlipidemia, fever, fat infiltration, hepatomegaly with or without icterus, splenomegaly, anemia, leukopenia, thrombocytopenia, coagulation disorders, hemolysis and reticulocytosis, abnormal liver function and coma. Symptoms are usually reversible when the infusion of the fat emulsion is discontinued. If signs of fat overload syndrome occur, discontinue infusion of Lipofundin® MCT immediately.

Reporting suspected side effects: Reporting suspected side effects following approval is of great importance. It allows ongoing monitoring of the pharmaceutical's risk-benefit profile. Healthcare professionals are requested to report any suspected incidents of adverse effects to the German Institute of Pharmaceuticals and Medical Products, Pharmacovigilance Dept., Kurt-Georg-Kiesinger Allee 3, 53175 Bonn, website: www.bfarm.de.

Prescription required. Version date: September 2019.

Pharmaceutical company: B. Braun Melsungen AG, 34209 Melsungen.

Mandatory texts

Pursuant to HWG

NuTRIflex® Lipid novo Infusion emulsion

Composition: The ready-to-use infusion solution 1000 mL contains after mixing the chamber contents:
Active pharmaceutical ingredients:

	NuTRIflex® Lipid peri novo	NuTRIflex® Lipid plus novo	NuTRIflex® Lipid special novo	NuTRIflex® Lipid special novo without electrolytes
from the upper chamber (glucose solution)	[g]	[g]	[g]	[g]
Glucose monohydrate	70.4	132.0	158.4	158.4
≙ Glucose	64.0	120.0	144.0	144.0
Sodium dihydrogen phosphate dihydrate	0.936	1.87	2.496	–
Zinc acetate dihydrate [mg]	5.28	5.26	7.02	–
from the middle chamber (fat emulsion)				
Refined soybean oil	20.00	20.00	20.00	20.00
Medium-chain triglycerides	20.00	20.00	20.00	20.00
from the lower chamber (amino acid solution)				
Isoleucine	1.87	2.26	3.28	3.28
Leucine	2.50	3.01	4.38	4.38
Lysine hydrochloride	2.27	2.73	3.98	–
≙ Lysine	1.82	–	3.18	–
lysine monohydrate	–	2.45	–	3.58
≙ Lysine	–	2.18	–	3.18
Methionine	1.57	1.88	2.74	2.74
Phenylalanine	2.81	3.37	4.92	4.92
Threonine	1.46	1.74	2.54	2.54
Tryptophan	0.46	0.54	0.80	0.80
Valine	2.08	2.50	3.60	3.60
Arginine	2.16	2.59	3.78	3.78
Histidine hydrochloride monohydrate	1.35	1.62	2.37	2.37
≙ Histidine	1.00	1.20	1.75	1.75
Alanine	3.88	4.66	6.79	6.79
Aspartic acid	1.20	1.44	2.10	2.10
Glutamic acid	2.80	3.37	4.91	4.91
Glycine	1.32	1.58	2.31	2.31
Proline	2.72	3.26	4.76	4.76
Serine	2.40	2.88	4.20	4.20
Sodium hydroxide	0.640	0.78	1.17	–
Sodium chloride	0.865	0.40	0.38	–
Sodium acetate trihydrate	0.435	0.22	0.25	–
Potassium acetate	2.354	2.75	3.69	–
Magnesium acetate tetrahydrate	0.515	0.69	0.91	–
Calcium chloride dihydrate	0.353	0.47	0.62	–
Amino acids (g)	32	38	56	56
Total nitrogen content (g)	4.6	5.4	8	8
Carbohydrates (g)	64	120	144	144
Fat (g)	40	40	40	40
Energy in the form of fat (kJ/kcal)	1590/380	1590/380	1590/380	1590/380
Energie in the form of carbohydrates (kJ/kcal)	1075/255	2010/480	2415/575	2415/575
Energy in the form of amino acids (kJ/kcal)	535/130	635/150	940/225	940/225
Non-protein energy (kJ/kcal)	2665/635	3600/860	4005/995	4005/995
Total energy (kJ/kcal)	3200/765	4235/1010	4945/1180	4945/1180
Osmolarity (mosm/kg)	950	1540	2115	1840
Theoretical osmolarity (mosm/L)	840	1215	1545	1330
pHvalue	5.0 – 6.0	5.0 – 6.0	5.0 – 6.0	5.0 – 6.0
Electrolytes (mmol/l):				
Sodium	40	40	53.6	–
Potassium	24	28	37.6	–
Magnesium	2.4	3.2	4.2	–
Calcium	2.4	3.2	4.2	–
Zinc	0.024	0.24	0.03	–
Chloride	38	36	48	–
Acetate	32	36	48	–
Phosphate	6	12	16	–

Other ingredients: Citric acid monohydrate, egg lecithin, glycerol, sodium oleate, all-rac-a-tocopherol, water for injection

Indications: To provide energy, essential fatty acids, amino acids, electrolytes and fluid as part of parenteral nutrition in patients with mild to moderate catabolism (NuTRIflex® Lipid peri novo); moderate catabolism (NuTRIflex® Lipid plus novo); moderate to severe catabolism (NuTRIflex® Lipid special novo) if oral or enteral nutrition is not possible, inadequate, or contraindicated. To provide energy, essential fatty acids, amino acids and fluids as part of parenteral nutrition in patients with moderate to severe catabolism (NuTRIflex® Lipid special without electrolytes novo) where oral or enteral nutrition is not possible, inadequate, or contraindicated. NuTRIflex® Lipid plus novo can be used in adults, adolescents and children over 2 years of age.

Type of application: For intravenous use. For central venous infusion only.

Contraindications:
- Hypersensitivity to the active substances, to egg, peanut or soy proteins, or to any of the above-mentioned excipients
- Congenital disorders concerning amino acid metabolism
- Severe hypertriglyceridemia (≥ 1000 mg/dL or 11.4 mmol/L)
- Severe coagulopathy
- Hyperglycemia that fails to respond to insulin doses of up to 6 units of insulin/hour
- Acidosis
- Intrahepatic cholestasis
- Severe hepatic impairment
- Severe renal failure without renal replacement therapy
- Worsening hemorrhagic diatheses
- Acute thromboembolic events, fat embolism

Due to its composition, NuTRIflex® Lipid peri novo/plus novo/special novo/special without electrolytes novo must not be used with newborns, infants, or children under the age of 2.

General contraindications to parenteral nutrition:
- Unstable circulatory conditions with vital threat (states of shock or collapse)
- Acute phases of heart attack or stroke
- Unstable metabolic situations (e.g. severe post-aggression syndrome, coma of unknown cause)
- Insufficient cellular oxygen supply
- Electrolyte and fluid imbalances
- Acute pulmonary edema
- Congestive heart failure

Fertility, pregnancy and breastfeeding: *Pregnancy* Little to no experiential data is available on the use of NuTRIflex® Lipid peri novo/plus novo/special novo/special without electrolytes novo during pregnancy. No sufficient animal studies on reproductive toxicity have been performed. Parenteral nutrition may be necessary during pregnancy. NuTRIflex® Lipid peri novo/plus novo/special novo/special without electrolyte novo should only be used during pregnancy after careful consideration. *Breastfeeding* Components/metabolites of NuTRIflex® Lipid peri novo/plus novo/special novo/special without electrolytes novo are excreted in breast milk, but no effects on breastfeeding newborns/children are expected at therapeutic doses. However, breastfeeding is not recommended for mothers receiving parenteral nutrition. *Fertility* No experiential data is available on NuTRIflex® Lipid peri novo/plus novo/special novo/special without electrolytes novo.

Side effects: Adverse reactions may occur even if the product is used correctly, dosage specifications are observed, and all safety requirements and regulations are followed. The following list contains a number of systemic reactions that may be related to the use of NuTRIflex® Lipid peri novo/plus novo/special novo/special without electrolyte novo. *Blood and lymphatic system disorders* Rare: Hypercoagulation; Unknown: Leukopenia, thrombocytopenia; *Immune system diseases* Rare: Allergic reactions (eg. anaphylactic reactions, skin rashes, laryngeal, oral and facial edema) *Metabolic and nutritional disorders* Very rare: Hyperlipidemia, hyperglycemia, metabolic acidosis The frequency of these side effects is dose- dependent and may increase with absolute or relative fat overdose. *Nervous system disorders* Rare: Headache, sleepiness *Vascular diseases* Rare: Hypertension or hypotension, feeling hot *Respiratory, thoracic and mediastinal disorders* Rare: Dyspnea, cyanosis *Gastrointestinal disorders* Occasional: Nausea, vomiting *Metabolic and nutritional disorders* Occasional: Loss of appetite *Liver and bile diseases* Unknown: Cholestasis; *Skin and subcutaneous tissue disorders* Rare: Erythema, sweating *Skeletal musculature, connective tissue and bone diseases* Rare: Back, bone and chest pain, lumbar pain *General disorders and administration site conditions* Rare: Increased body temperature, cold chills; Very rare: Fat overload syndrome (see below for details). If side effects occur, discontinue infusion.
Discontinue infusion if triglyceride levels exceed 11.4 mmol/l (1000 mg/dl) during infusion. At levels above 4.6 mmol/l (400 mg/dl), infusion can be continued at a reduced dosage.
When restarting the infusion, monitor the patient carefully, especially at the beginning, and measure serum triglyceride concentration at short intervals.

Information on certain side effects: Nausea, vomiting and loss of appetite are often symptoms of diseases for which parenteral nutrition is indicated; they can also be associated with parenteral nutrition itself.

Fat overload syndrome: Overdose in conjunction with impaired ability to excrete triglycerides can lead to "fat overload syndrome." Monitor for possible signs of metabolic overload. The syndrome may occur for congenital reasons (individual differences in metabolism) or due to impaired fat metabolism resulting from current or previous diseases. Even when infusion rate guidelines are observed, this syndrome can develop in patients with severe triglyceridemia or patients whose clinical condition changes suddenly (e.g., due to kidney function impairment or infection). Fat overload syndrome is characterized by hyperlipidemia, fever, fat infiltration, hepatomegaly with or without icterus, splenomegaly, anemia, leukopenia, thrombocytopenia, coagulation disorders, hemolysis and reticulocytosis, abnormal liver function and coma. The symptoms are normally reversible if infusion of the fat emulsion is discontinued.

Should signs of fat overload syndrome develop, immediately discontinue infusion of NuTRIflex® Lipid peri novo/plus novo/special novo/special without electrolytes novo.

Version date: November 2017

Gelafundin® ISO 40 mg/mL infusion solution
Composition: 1000 mL solution contains: Gelatin polysuccinate (= modified liquid gelatin): 40.0 g (molecular weight, mean weight: 26,500 Dalton), 5.55 g sodium chloride, 3.27 g sodium acetate trihydrate, 0.30 g potassium chloride, 0.15 g calcium chloride dihydrate, 0.20 g magnesium chloride hexahydrate. Electrolyte concentrations: 151 mmol/l sodium, 103 mmol/l chloride, 4 mmol/l potassium, 1 mmol/l calcium, 1 mmol/l magnesium, 24 mmol/l acetate.
Indications: Gelafundin® ISO is a colloidal plasma volume replacement agent in an isotonic, balanced full electrolyte solution for treating relative or absolute hypovolemia and shock, preventing hypotension a) due to relative hypovolemia while inducing epidural or spinal anesthesia b) in case of imminent significant blood loss during surgery,

in procedures with extracorporeal circulation as part of the priming fluid in combination with crystalloid solutions (e.g. heart-lung machine).
Contraindications: Hypersensitivity to solutions containing gelatin or any of the excipients, hypersensitivity to galactose-alpha-1.3-galactose (alpha-Gal) or known allergy to red meat (mammalian meat) and offal, hypervolemia, hyperhydration, acute heart failure.
Side effects: Adverse drug reactions may occur during and after use of Gelafundin® ISO. Typically, they will occur in connection with anaphylactic/anaphylactoid reactions of varying severity (especially with respect to galactose-alpha-1.3-galactose [alpha-Gal] hypersensitivity or allergy to red meat and offal). Anaphylactic/anaphylactoid reactions up to and including shock, tachycardia, hypotension, fever, chills, nausea, vomiting, abdominal pain, decreased

oxygen, decreased hematocrit, reduced plasma protein concentrations; relatively high doses of Gelafundin® ISO cause dilution of coagulation factors and may therefore affect blood clotting. Following administration Gelafundin ISO in high doses, prothrombin time may be increased and activated partial thromboplastin time (aPTT) may be prolonged.

Version date: 05.2021.
Prescription required.
Pharmaceutical company: B. Braun Melsungen AG, Carl-Braun-Straße 1, 34212 Melsungen, Germany

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Osmofundin 15 % N infusion solution
Composition: 1000 mL solution contains 150.0 g mannitol.
Indications: Prevention of acute kidney failure (after trial infusion); brain pressure reduction with intact blood-brain barrier; intraocular pressure reduction (for acute glaucoma).
Contraindications: The following conditions contraindicate the use of Osmofundin 15% N: Hypersensitivity to mannitol; persistent oliguria/anuria following trial infusion of osmofundin 15% N; acute cardiac decompensation; disorders of the blood-brain barrier; pulmonary edema; hyperhydration; dehydration; obstructions preventing urinary flow; hyperosmolarity (serumosmolarity > 320 mOsm/kg); intracranial bleeding.
Side effects: Most of the side effects listed below are dose-dependent and can therefore be considered symptoms of intoxication. Depending on dose and patient clinical condition, the primary side effects include electrolyte and fluid imbalances with hyper- or hyponatremia, hyper- or

hypokalemia and hyper- or dehydration. Hypersensitivity - either local reactions (such as rhinitis, urticaria, skin rash) or systemic anaphylactic reactions (such as fever, edema, breathing difficulties, hypotension, tachycardia, or anaphylactic shock). Acidosis, hyponatremia, hyperkalemia, hyperhydration - especially at the start of osmotherapy and in the event of overdose. Hypernatremia, hypokalemia, dehydration due to polyuria occurring at a later stage after prolonged administration of mannitol solutions. Headache, dizziness, cramps. Blurred vision. Acute volume overload of the cardiovascular system (especially after excessively rapid infusion or due to mannitol overdose, especially in conditions involving insufficient urine formation). Dry mouth, nausea, vomiting, upper abdominal discomfort. Temporary muscular rigidity. Urinary retention, polyuria rapidly developing into oligouria, uricosuria. Chills, fever, arm pain, back pain, angina-pectoris-like chest pain, thirst. When infusing into small veins: vein irritation and phlebitis, skin

necrosis. Pulmonary edema may occur if renal function is impaired. Due to osmotic effect: states of confusion.

Version date: 07.2014.
Prescription required.
Pharmaceutical company: B. Braun Melsungen AG, Carl-Braun-Straße 1, 34209 Melsungen.

Sterofundin® BG-5 infusion solution
Composition: 1000 mL infusion solution contains: 1.25 g sodium chloride, 1.80 g potassium chloride, 1.14 g sodium dihydrogen phosphate dihydrate, 0.51 g magnesium chloride hexahydrate, 5.60 g sodium lactate solution 50% w/w (γ 2.80 g sodium lactate) 55.0 g glucose monohydrate (γ 50.0 g glucose). Electrolyte concentrations: 53.7 mmol/l sodium ion, 24.1 mmol/l potassium ion, 53.3 mmol/l chloride ion, 25.0 mmol/l lactate, 7.3 mmol/l phosphate ion.
Indications: Providing water and electrolytes with a low percentage of carbohydrate, especially in post-operative or post-traumatic infusion therapy when drugs or infusions containing sodium are administered in parallel; partial coverage of energy requirements; carrier solution for compatible electrolyte concentrates and drugs.
Contraindications: Sterofundin® BG-5 should not be used

in patients with: Hypersensitivity to the active ingredients or any of the excipients; hyperkalaemia; persistent hyperglycemia that does not respond to insulin doses of up to 6 units/hour; metabolic acidosis; impaired lactate utilization; renal insufficiency; i.e., in oliguria or anuria without renal replacement therapy (hemodialysis or hemofiltration); hyperhydration; heart failure; pulmonary or cerebral edema; hypotonic dehydration.
Side effects: Side effects can occur as symptoms of overdose. Hypersensitivity reactions in the form of urticaria, hospital-acquired hyponatremia*, hyponatremic encephalopathy*, fever reactions caused by the type of application, infections at the injection site, local pain or reactions, venous irritation, venous thrombosis or inflammation emanating from the injection site, extravasation. (*Hospital-acquired hyponatremia may

lead to irreversible brain damage and death due to the development of acute hyponatremic encephalopathy.) Adverse effects can also be triggered by the pharmaceuticals added to the solution. The likelihood of these reactions depends on the type of pharmaceutical added.

Version date: 01.2018.
Prescription required.
Pharmaceutical company: B. Braun Melsungen AG, Carl-Braun-Straße 1, 34209 Melsungen.

Aqua ad iniectabilia Braun
Composition: 100 mL solution contains: 100 mL water for injection.
Indications: Creating and diluting parenteral preparations.

Contraindications: There are no contraindications to water for injection as such.
Side effects: There are no known side effects if the instructions for use are followed.

Version date: 03-2014.
Prescription required.
Pharmaceutical company: B. Braun Melsungen AG, Carl-Braun-Straße 1, 34212 Melsungen.

Notes

B. Braun Vet Care GmbH | Am Aesculap-Platz | 78532 Tuttlingen | info@bbraun-vetcare.de | www.bbraun-vetcare.com

Thank you very much – The pictures were taken in Hergolding with the kind support of the small animal specialists Frontier GmbH.