



PRESCRIPTION

PATIENT ACCESS

PREPARATION

APPLICATION

DISCHARGE  
MANAGEMENT

# Every drop counts

Continuous evolution in Safe Infusion Therapy

# Risk Prevention in Infusion Therapy

Because safety is essential

## OPTIMIZING PROCESSES IN INFUSION THERAPY. BECAUSE TIME IS A PRICELESS COMMODITY.

Infusion therapy is an essential part of medical treatments – in drug administration, volume replacement and fluid therapy. It is an irreplaceable and often lifesaving part of treatment.

However, some process steps within infusion therapy are not without risks.

### 1 Error/ Patient/ Day

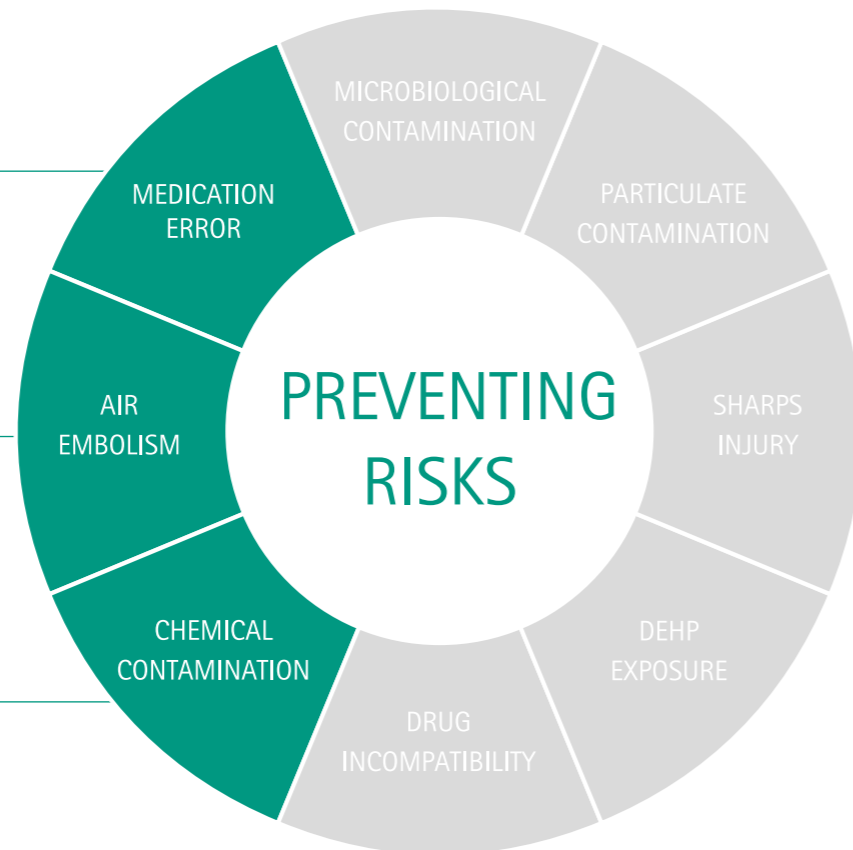
The institute of Medicine estimated that in hospitals "a typical patient would be subject to one administration **MEDICATION ERROR** per day".<sup>1</sup>

### Parallel infusions

Combinations of gravity infusion and pump driven infusion in parallel bears the risk of air embolism, when gravity infusion runs dry.<sup>2</sup>

### Approx. 8 million Health Care Workers

are unnecessarily exposed to highly toxic drugs used to treat cancer, e.g. by dermal exposure and airborne concentrations of anti-neoplastics.<sup>3</sup>



**B. BRAUN DEVELOPS SOLUTIONS  
TO HELP AVOID THE MOST COMMON  
RISKS IN INFUSION THERAPY AND  
REVEAL STRATEGIES TO MITIGATE  
THEM EFFECTIVELY.**

The delivery of medication to the patient in the infusion therapy requires a set-up of a complex system of medical devices equally as well as highest concentration of the healthcare worker – as every drop counts.

As a partner with our customers, we are dedicated to make infusion therapy safer, more efficient, and less complex – for physicians, pharmacists, nursing staff, hospital managers, and patients. And to open up prospects by developing innovative solutions, product systems, and products that are designed to save resources, optimize processes and improve treatment quality.

# Infusion Therapy

Because every drop counts



## INFUSION THERAPY

The most common alarms associated with infusion devices are those relating to air entering the administration set.<sup>4</sup> The complications that arise from air entering the infusion system may create risks and time pressures for both the patients and the healthcare worker, including but not limited to damage to the set or cannula, loss of prescribed medication and an increased risk of infection due to disconnection of the IV line. B. Braun administration sets using SafeSet technology prevent entry of air into the tubing allowing reduction to the associated risks and releasing healthcare workers time to care for patients.<sup>5</sup>



### AirStop

A hydrophilic airtight membrane triggers the upstream sensor to stop the infusion, because the drip chamber is empty. It reduces patient disconnections and potential infections risk.



### PrimeStop

A protective cap lined with a hydrophobic membrane stops fluid leaking and helps to protect against contamination.



PVC-FREE



DEHP-FREE



ANTI FREE-FLOW-CLAMP



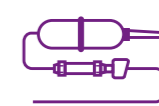
HIGH ACCURACY



INTUITIVE HANDLING



GUIDED LOADING



INFUSOMAT<sup>PLUS</sup> SAFASET





Besides the general daily needs of hospitals related to infusion management, we pay special attention to particularly demanding and complex therapies, such as those with anti-infectives, anti-cancer drugs, anti-emetics, volume replacement and fluids.

# Therapy Areas

For improved safety



ANTI-CANCER

## ANTI-CANCER THERAPY (ONCOLOGY)

The treatment of chemotherapy is one of the most challenging processes within the infusion therapy. International guidelines like the NIOSH Alert, recommend the special handling of cytotoxic drugs to reduce risks during the process. The complete range of B. Braun products creates a closed system and offers a convenient solution for a safer administration of cytotoxic drugs.



ANTI-INFECTIVES

## ANTI-INFECTIVE THERAPY

Especially in the field of anti-infectives, drug application is done in a high frequency in the daily routine of a healthcare worker. The high amount of infusions done per day exposes professionals and patients to many risks. In order to reduce workload and risks to occur, B. Braun is offering a convenient safety portfolio with this innovative IV Line Type Flushing Set. It allows the delivery of antibiotics with less residual volume remaining in the line – as every drop counts.



PAEDIATRICS & NEONATOLOGY

## PAEDIATRICS AND NEONATOLOGY

Paediatric Patients are a special group in hospital treatment. They require a special level of care and attendance. Incorrect use or application of therapies carries substantial risks. Therefore risk prevention is even more important in pediatrics as incidences of substantial risk like air embolism, overdose or drug incompatibility may be life threatening for small patients. B. Braun offers a dedicated portfolio of medical devices for this special target group.



CLOSED SYSTEM



UV-PROTECT



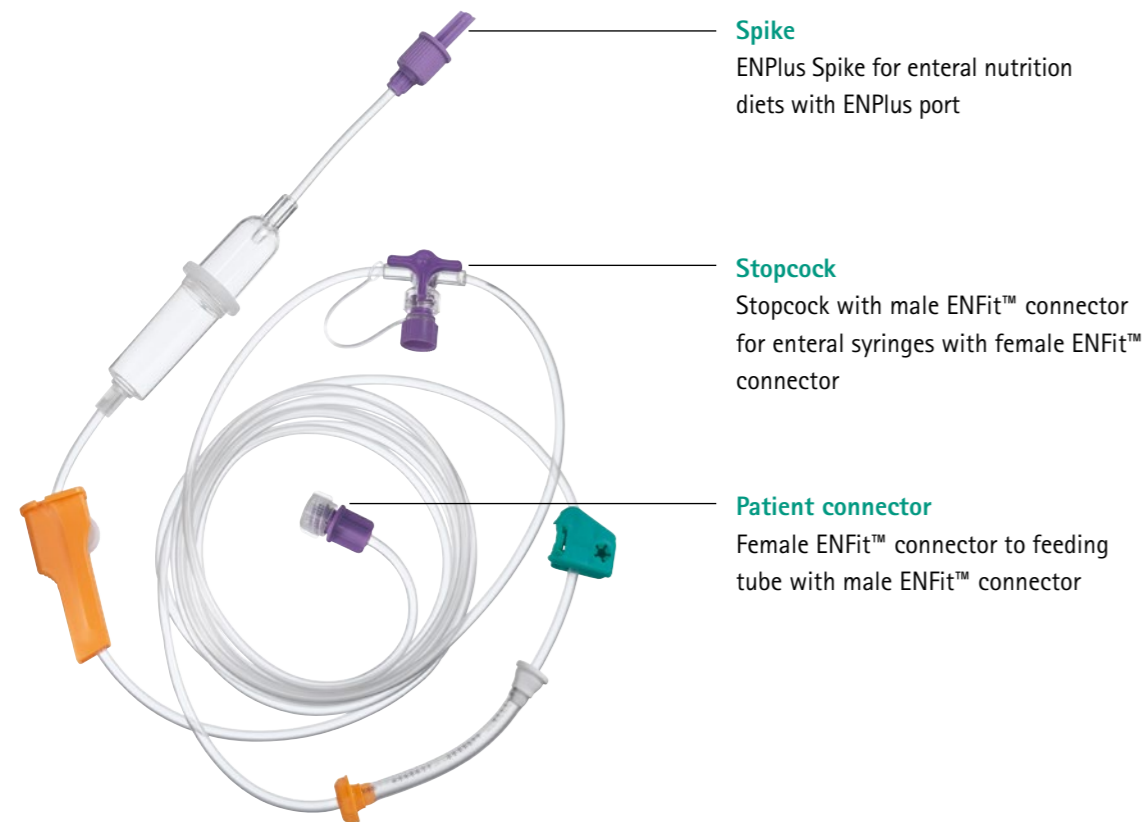
PVC-FREE

# Nutrition Therapy

Assure the right connections

In the past, enteral and intravenous application could be confounded easily, which was related to severe risks for the patient. To enhance patient safety the new ENFit™ standard design for enteral application systems has been defined in the ISO 80369-3 series, establishing ENFit™ as the new international standard.

B. Braun provides dedicated enteral connectors according to these new ISO standards, to reduce the risk of enteral and parenteral misconnections and related hazards and to ensure secure connection.

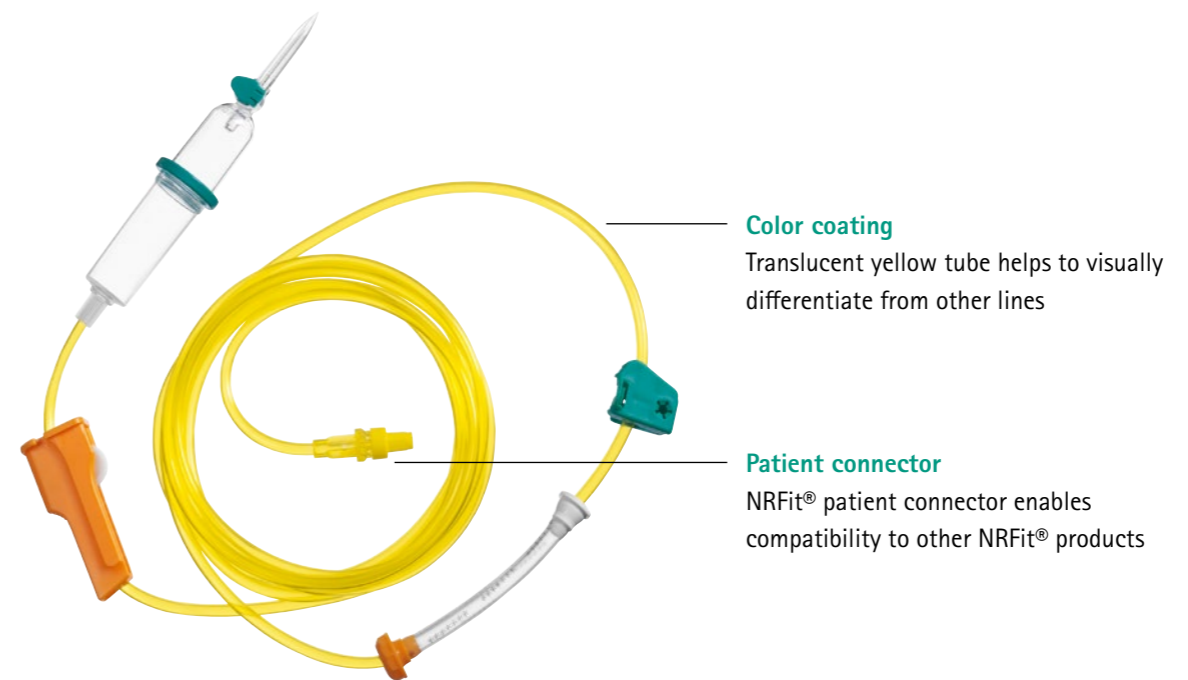


# Pain Therapy

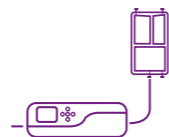
Connecting what belongs together

As the current Luer connector design is used in many medical devices for the delivery of various infusions, it poses the risk of inadvertent misconnections which can result in severe health consequences. To reduce the risk of wrong route medication errors the International Organization for Standardization (ISO)

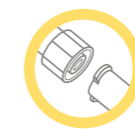
has developed standards for small-bore connectors, one being in the field of Neuraxial and Regional Anesthesia (ISO 80369-6). The name that will be used to identify devices that comply the ISO 80369-6 is NRFIT®.



ENFIT™



ENTERAL  
NUTRITION



NRFIT®











INFUSOMAT<sup>PLUS</sup>  
SAFESET



# Portfolio Overview



## Infusomat<sup>®</sup>plus Lines




	Description	Tube material	Length (cm)	Ø (mm)	Priming vol. (ml)	Y-port	Units per box	Code no. (REF)
<b>SafeSet</b>								
		PVC	240/150	3.0 x 4.1	17.3	-	100	8700200
	<ul style="list-style-type: none"> <li>15 µm fluid filter</li> <li>Drip chamber incl. AirStop function</li> </ul>	PVC	300/200	3.0 x 4.1	21.2	-	100	8700210
	<ul style="list-style-type: none"> <li>Different tube materials</li> <li>Different lengths</li> </ul>	PUR	240/150	3.0 x 4.1	17.8	-	100	8700220
	<ul style="list-style-type: none"> <li>Luer-Lock Patient connector</li> <li>DEHP-free</li> </ul>	PVC	300/200	3.0 x 4.1	22.2	needle-free	100	8700240
		PUR	300/200	3.0 x 4.1	22.9	needle-free	100	8700250
<b>Flushing</b>								
	<ul style="list-style-type: none"> <li>15 µm fluid filter</li> <li>Inline drip chamber incl. AirStop function</li> <li>Spinlock patient connector</li> </ul>	PUR	300/200	3.0 x 4.1	22.4	-	25	8700280
<b>UV-light protect</b>								
	<ul style="list-style-type: none"> <li>Light protection up to 520 nm</li> <li>15 µm fluid filter</li> <li>Drip chamber incl. AirStop function</li> </ul>	PUR	240/150	3.0 x 4.1	17.8	-	100	8700260
	<ul style="list-style-type: none"> <li>Luer-Lock patient connector</li> <li>PVC-free/DEHP-free</li> </ul>	PUR	300/200	3.0 x 4.1	22.9	needle-free	100	8700270
<b>Standard</b>								
	<ul style="list-style-type: none"> <li>15 µm fluid filter</li> </ul>	PVC	240/150	3.0 x 4.1	17.3	-	100	8700310
	<ul style="list-style-type: none"> <li>Spike drip chamber</li> </ul>	PUR	240/150	3.0 x 4.1	17.8	-	100	8700320
	<ul style="list-style-type: none"> <li>Different tube materials</li> <li>Different lengths</li> </ul>	PVC	300/200	3.0 x 4.1	22.2	needle-free	100	8700330
	<ul style="list-style-type: none"> <li>Luer-Lock patient connector</li> <li>DEHP-free</li> </ul>	PVC	300/200	3.0 x 4.1	21.7	needle-based	100	8700340

	Description	Tube material	Length (cm)	Ø (mm)	Priming vol. (ml)	Y-port	Units per box	Code no. (REF)
<b>Transfusion</b>								
	<ul style="list-style-type: none"> <li>200 µm blood filter</li> <li>Spike drip chamber</li> </ul>	PVC	240/150	3.0 x 4.1	18.1	-	100	8700350
	<ul style="list-style-type: none"> <li>Spinlock patient connector</li> <li>DEHP-free</li> </ul>	PVC	300/200	3.0 x 4.1	21.9	needle-free	100	8700360
<b>Cyto-Set<sup>®</sup></b>								
	<b>AirStop:</b>	PUR	210/155	3.0 x 4.1	23.9	3 needle-free valves	20	8700420
	<ul style="list-style-type: none"> <li>Drip chamber incl. Airstop function</li> <li>Grip plate with integrated back-check valves</li> </ul>	PUR	210/155	3.0 x 4.1	23.9	5 needle-free valves	20	8700430
	<ul style="list-style-type: none"> <li>Cytostatic resistant material</li> <li>Eurofix Spinlock patient connector</li> </ul>	PUR	225/170	3.0 x 4.1	27.4	5 needle-free valves	20	8700460
	<b>Standard:</b>	PUR	210/155	3.0 x 4.1	23.9	3 needle-free valves	20	8700480
	<ul style="list-style-type: none"> <li>15 µm fluid filter</li> <li>Grip plate with integrated back-check valves</li> </ul>	PUR	210/155	3.0 x 4.1	23.9	5 needle-free valves	20	8700490
	<ul style="list-style-type: none"> <li>Cytostatic resistant material</li> <li>Eurofix Spinlock patient connector</li> </ul>	PUR	225/170	3.0 x 4.1	27.4	5 needle-free valves	20	8700470
	<b>UV-light protect:</b>	PUR	210/155	3.0 x 4.1	23.9	3 needle-free valves	20	8700440
	<ul style="list-style-type: none"> <li>Light protection up to 520 nm</li> <li>Drip chamber incl. AirStop function</li> <li>Grip plate with integrated back-check valves</li> </ul>	PUR	210/155	3.0 x 4.1	23.9	5 needle-free valves	20	8700450
	<ul style="list-style-type: none"> <li>Cytostatic resistant material</li> <li>Eurofix Spinlock patient connector</li> </ul>							

# Portfolio Overview



## Infusomat<sup>plus</sup> Lines

	Description	Tube material	Length (cm)	Ø (mm)	Priming vol. (ml)	Y-port	Units per box	Code no. (REF)
<b>Oncology with 0.2 µm Sterifix® Filter</b>								
	<ul style="list-style-type: none"> <li>15 µm fluid filter</li> <li>0.2 µm hydrophilic fluid filter (Sterifix®)</li> <li>Drip chamber incl. AirStop function</li> <li>Eurofix Spinlock patient connector</li> <li>PVC-free/DEHP-free</li> </ul>	PUR	240/150	3.0 x 4.1	20.6	-	100	8700300
<b>Regional Anesthesia – NRFit®</b>								
	<ul style="list-style-type: none"> <li>15 µm fluid filter</li> <li>Drip chamber incl. AirStop function</li> <li>NRFit® patient connector</li> <li>Translucent yellow tube</li> <li>PVC-free/DEHP-free</li> </ul>	PUR	300/200	3.0 x 4.1	21.8	-	100	8700410

	Description	Tube material	Length (cm)	Ø (mm)	Priming vol. (ml)	Y-port	Units per box	Code no. (REF)
<b>Enteral Nutrition – ENFit™</b>								
	<ul style="list-style-type: none"> <li>Inline drip chamber and roller clamp</li> <li>Universal adapter for enteral nutrition diets with ENPlus (cross) port</li> <li>Female ENFit™ patient connector</li> <li>Stopcock with male ENFit™ connector for enteral syringe with female ENFit™ connector</li> <li>PVC-free/DEHP-free</li> </ul>	PUR	330/220	3.0 x 4.1	28.0	needle-free	40	8700370
	<ul style="list-style-type: none"> <li>Inline drip chamber and roller clamp</li> <li>1,000 ml storage bag</li> <li>Graduated scale and label for patient data</li> <li>Female ENFit™ patient connector</li> <li>Stopcock with male ENFit™ connector</li> <li>DEHP-free</li> </ul>	PVC	260/150	3.0 x 4.1	18.5	needle-free	25	8700380
	<ul style="list-style-type: none"> <li>Inline drip chamber and roller clamp</li> <li>ENPlus Spike for enteral nutrition diets with ENPlus (cross) port</li> <li>Female ENFit™ patient connector</li> <li>Stopcock with male ENFit™ connector for enteral syringe with female ENFit™ connector</li> <li>DEHP-free</li> </ul>	PVC	330/220	3.0 x 4.1	23.1	needle-free	25	8700400





# Portfolio Overview

## Original-Perfusor® Lines

	Description	Tube material	Length (cm)	Ø (mm)	Priming vol. (ml)	Units per box	Code no. (REF)
 <ul style="list-style-type: none"> <li>▪ Luer-Lock patient connector</li> <li>▪ DEHP-free</li> </ul>		PVC	25	1.5 x 2.7	0.5	100	0066088K
		PVC	50	1.5 x 2.7	1.3	100	8255172
		PVC	100	1.5 x 2.7	2.0	100	0009483H
		PVC	150	1.5 x 2.7	2.9	100	8722960
		PVC	200	1.5 x 2.7	3.8	100	8722862
		PVC	250	1.5 x 2.7	4.8	100	8255490
		PVC	300	1.5 x 2.7	5.7	100	8255253
		PVC	150	1.5 x 2.7	3.3	100	8722820*
		PVC	200	1.5 x 2.7	4.8	100	8723001**
		PVC	75	0.9 x 1.9	0.6	100	8722870N
		PVC	150	0.9 x 1.9	1.1	100	8255504N
		PVC	200	0.9 x 1.9	1.4	100	8745919N
 <ul style="list-style-type: none"> <li>▪ Anti-Free-Flow Protection Clamp</li> <li>▪ Luer-Lock patient connector</li> <li>▪ DEHP-free</li> </ul>		PVC	150	0.9 x 1.9	1.1	100	8722940
		PVC	200	0.9 x 1.9	1.4	100	8722941

\* with Safsite® Valve




\*\* with Sterifix® 0.2 µ





	Description	Tube material	Length (cm)	Ø (mm)	Priming vol. (ml)	Units per box	Code no. (REF)
 <ul style="list-style-type: none"> <li>▪ Luer-Lock patient connector</li> <li>▪ PVC-free</li> </ul>		PE	10	1.0 x 2.0	0.2	100	0066086H
		PE	25	1.0 x 2.0	0.3	100	0066087J
		PE	50	1.0 x 2.0	0.5	100	8255059
		PE	100	1.0 x 2.0	0.9	100	8255067
		PE	150	1.0 x 2.0	1.3	100	8722935
		PE	200	1.0 x 2.0	1.7	100	8723060
		PE	250	1.0 x 2.0	2.1	100	8272565
		PE	300	1.0 x 2.0	2.5	100	8250146
 <ul style="list-style-type: none"> <li>▪ Light protection up to 520 nm</li> <li>▪ Luer-Lock patient connector</li> <li>▪ PVC-free</li> </ul>		PE	150	1.0 x 2.0	1.3	100	8723017
		PE	200	1.0 x 2.0	1.7	100	8723018
 <ul style="list-style-type: none"> <li>▪ ENFit™ female; ENFit™ male</li> </ul>		PE	150	2.5 x 4.3	7.9	25	87229910
 <ul style="list-style-type: none"> <li>▪ NRFit® patient connector</li> <li>▪ Translucent yellow tube</li> </ul>		PUR	200	1.3 x 2.4	2.8	25	8722865



# Portfolio Overview


Original Perfusor® Syringes, according to DIN EN ISO-Norm 7886-1/7886-2

	Description	Volume (ml)	Graduation (ml)	Units per box	Code no. (REF)
	<ul style="list-style-type: none"> <li>3-piece syringe</li> <li>Luer-Lock / male</li> </ul>	50	1.0	100	8728844F-06
	<ul style="list-style-type: none"> <li>Aspiration needle, needle diameter 2.0 mm</li> <li>3-piece syringe</li> <li>Luer-Lock / male</li> </ul>	50	1.0	100	8728810F-06
	<ul style="list-style-type: none"> <li>Aspiration needle with 15 µm filter, needle diameter 2.0 mm</li> <li>3-piece syringe</li> <li>Luer-Lock / male</li> </ul>	50	1.0	100	8728852F-06

	Description	Volume (ml)	Graduation (ml)	Units per box	Code no. (REF)
	<ul style="list-style-type: none"> <li>Light protection up to 520 nm</li> <li>3-piece syringe</li> <li>Luer-Lock / male</li> <li>Aspiration needle with 15 µm filter, needle diameter 2.0 mm</li> </ul>	50	1.0	100	8728861F-06
	<ul style="list-style-type: none"> <li>3-piece syringe</li> <li>NRFit® connector</li> <li>Yellow plunger rod</li> </ul>	50	1.0	100	8728845F-01
	<ul style="list-style-type: none"> <li>3-piece syringe</li> <li>Luer-Lock / male</li> </ul>	20	1.0	50	8728615
	<ul style="list-style-type: none"> <li>Aspiration needle, needle diameter 2.0 mm</li> <li>3-piece syringe</li> <li>Luer-Lock / male</li> </ul>	20	1.0	50	8728623

# Portfolio Overview

## Omnifix® Syringes

	Description	Volume (ml)	Graduation ml	Units per box	Code no. (REF)
	<ul style="list-style-type: none"> <li>3-piece syringe</li> <li>Luer-Lock/male</li> </ul>	2	0.1	100	4617029V
		3	0.1	100	4617022V
		5	0.2	100	4617053V
		10	0.5	100	4617100V
		20	1.0	100	4617207V
		30	1.0	100	4617304F

	Description	Volume (ml)	Graduation ml	Units per box	Code no. (REF)
	<ul style="list-style-type: none"> <li>3-piece syringe</li> <li>Luer-Lock/male</li> </ul>	50/60	1.0	100	4617509F
	<ul style="list-style-type: none"> <li>Light protection up to 520 nm</li> <li>3-piece syringe</li> <li>Luer-Lock/male</li> </ul>	50/60	1.0	100	4617510F-06
	<ul style="list-style-type: none"> <li>3-piece syringe</li> <li>NRFit® connector</li> <li>Yellow plunger rod</li> </ul>	50/60	1.0	100	4617508F-01

# References

1. Institute of Medicine (2007) Preventing Medication Errors: Quality Chasm Series. Washington, DC: National Academy Press; p. 111
2. <http://www.safeinfusiontherapy.com/cps/rde/xchg/hc-safeinfusion-en-int/hs.xsl/7701.html>
3. Graeve, C. U., MCGovern, P. M., Alexander, B., Church, T., Ryan, A., Polovich, M., (2016), Occupational Exposure to Antineoplastic Agents. Workplace Health & Safety, 65(1), 9-20
4. Analysis of Infusion Pump Error Logs and their significance for healthcare, British Journal of Nursing, Intravenous Supplement, 2012, Apr 26 – May 9; 21(8)
5. Nurse-patient ratios; a systemic review on the effects of nurse staffing on patients, nurse employee and hospital outcomes; British Journal of Nursing, 2004 Jul-Aug, 37 (7-8) American Academy of Pediatrics. 2003 Aug; 112(2): 431-436.

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