



Value Life

Continuous Pumps
Elastomeric Single-use Infusion Pumps



Accufuser[®]

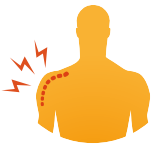
Accurate and easy to use
silicone balloon infusion pump

Accufuser®

Single-use silicone balloon infusion pump

The best choice for **simple**, **accurate** and **safe** infusions using integrated UV protection for improved medication stability.

Designed to deliver a continuous flow of safe and accurate infusions for a variety of treatments and therapies including:



Post-operative pain management



Cancer pain management



Chemotherapy



Thalassemia



Antibiotics



The blue end cap is a **priming filter**, or hydrophobic membrane, that fulfils three key functions:

- Air is released but the medication is contained
- Priming is easy – No clamping is necessary, nor does the end cap need to be removed
- Connection is easy. Just remove the filter and attach to the patient.



Our range of products

To meet patient needs and a wide range of clinical requirements, Accufuser® is available in four different sizes – 60ml, 100ml, 300ml and 600ml – and flow rates ranging from 0.5ml per hour up to 250ml per hour.

Code information

Using Accufuser model 'C0005S' as an example:

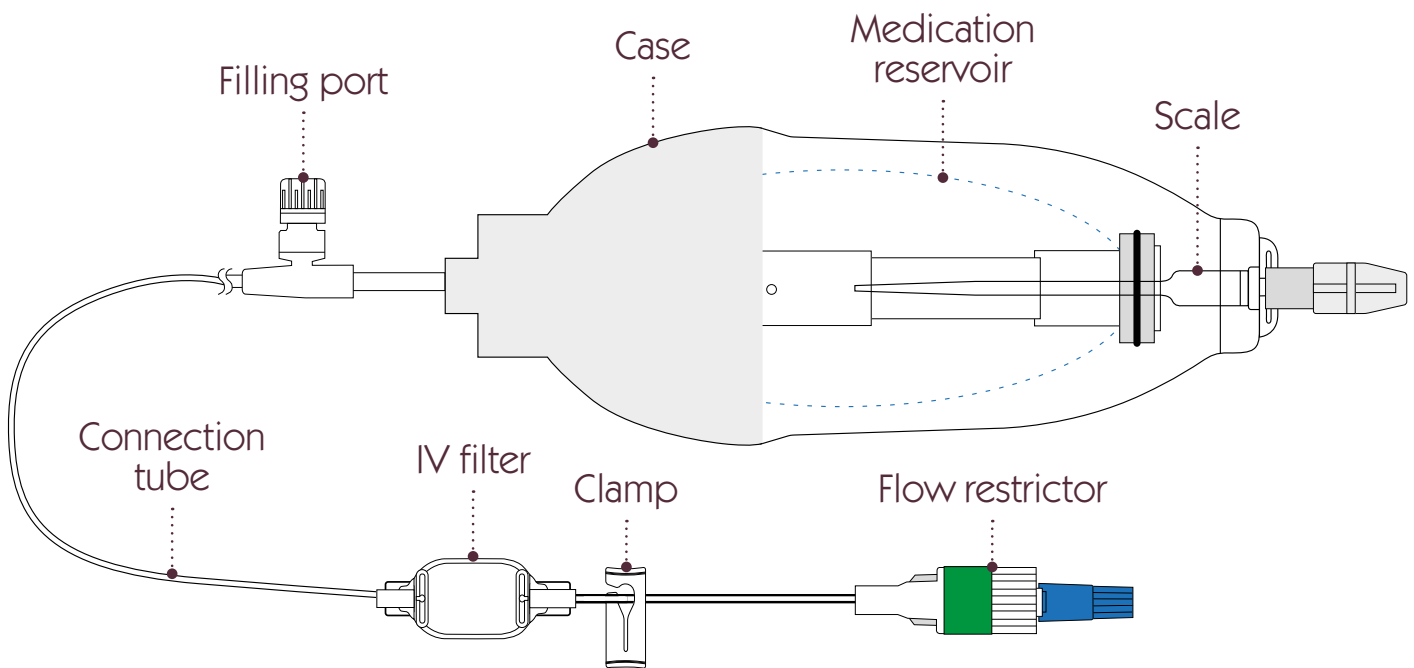
C: Continuous type **0005:** Flow rate of 0.5ml/hr **S:** Reservoir volume 60ml

Vygon order code	Volume mls	Flow Rate ml/hr	Infusion time Therapy Hours – Device full*
VAWC0005S	60	0.5	120
VAWC0010S		1.0	60
VAWC0010S DFO			
VAWC0020S		2.0	30
VAWC0020S - DFO			
VAWC0040S		4.0	15
VAWC0050S		5.0	12
VAWC0050S DFO			
VAWC0005M	100	0.5	200
VAWC0010M		1.0	100
VAWC0020M		2.0	50
VAWC0040M		4.0	25
VAWC0050M		5.0	20
VAWC1000M		100.0	1
VAWC2000M		200.0	0.5
VAWC0500M		50.0	2
VAWC0010L	300	1.0	300
VAWC0015L		1.5	200
VAWC0020L		2.0	150
VAWCO050L		5.0	60
VAWC0080L		8.0	37.5
VAWCO100L		10.0	30
VAWC2500L		250.0	1.2
VAWC1000L		100.0	3
VAWC0200XL	600	20	
Accessories			
MP300	Accufuser Net Carry Pouch 300ml		
MP600	Accufuser Net Carry Pouch 600ml		

Design

Continuous shape and structure

The design of Accufuser® focuses on the **safe** and **accurate** delivery of a **continuous flow** of infusions.



Key features

Accufuser's key features ensure the safe and accurate delivery of infusions.

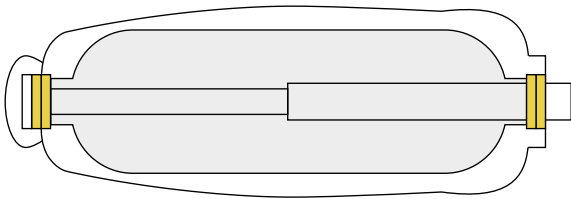
The **balloon** and **plunger** provide:

- Energy supply elasticity
- The maintenance of designated pressure
- Sustained perpendicular inflation of the balloon when it is filled with medication.

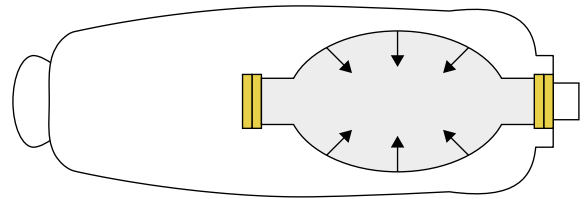
The **housing** of the pump protects the balloon from external stress and a **magnifier** (as detailed on page six) shows the remaining medication left to infuse.

Maintaining pressure is vital to ensure constant flow rate and Accufuser® achieves minimal pressure change even though volume and surface area decrease. The patented, fixed and moveable plunger system ensures the balloon contracts evenly.

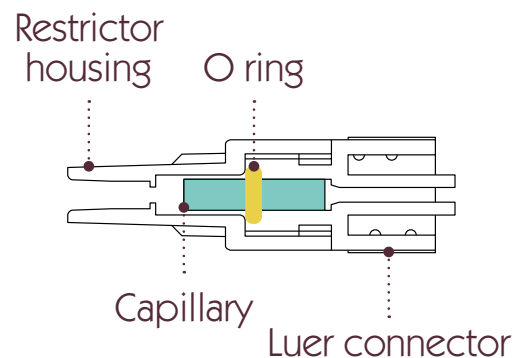
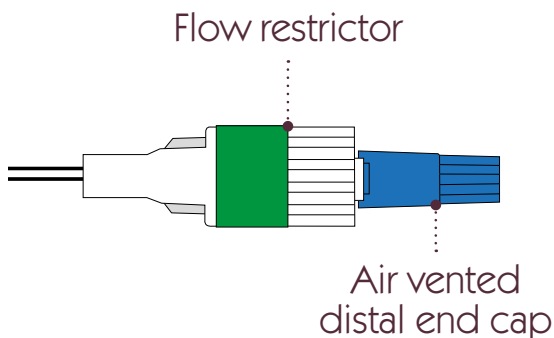
When 100ml filled



When 50ml filled



Combined with the balloon pressure, the **flow restrictor** controls the fixed flow rate. It works using Hagen-Poiseuille's law in which the fluid flow rate in the pipe is affected by its viscosity.



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- Connection is easy. Just remove the filter and attach to the patient.



Reduce
time & costs

Did you know...
Our **Lifecath PICC lines** are designed for ambulatory patients who require short to long-term central venous access.

Email marketing@vygon.co.uk for further details.

Ease of use

User benefits and convenience

Colour coding

Accufuser® is easy to use thanks to the clear colour coding, which indicates flow rates in ml/hr.

Blue end cap

The blue end cap has an integrated priming filter, or hydrophobic membrane, which allows air to escape but not into the medication. This means the pump can be primed without having to remove the end cap, which also reduces the risk of contamination.

Magnified integrated scale

Inside the pump a graduated scale is magnified so that you can clearly see the remaining volume left to infuse. Increasing the size of the scale reduces the likelihood of reading errors.

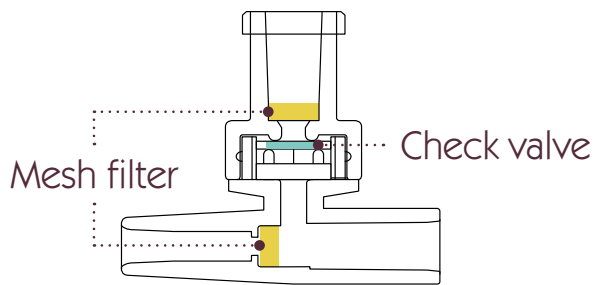


Safe to use

Focusing on safety

Safe Filling Port

Many of Accufuser's® built-in features focus on safety. The filling port has a check valve to prevent backflow and integrated mesh filters capture particulates.



Maintaining flow rate and accuracy

The flow rate of Accufuser is calibrated at the following conditions:

- **Viscosity:** Dextrose 5% water (D5W) at $32 \pm 2^\circ\text{C}$
Normal Saline 0.9% at $23^\circ\text{C} \pm 2^\circ\text{C}$

Accufuser has been designed to perform at its nominal flow rate at $32 \pm 2^\circ\text{C}$ with D5W. It has been confirmed to produce an analogous flow rate with 0.9% normal saline at $23^\circ\text{C} \pm 2^\circ\text{C}$. The average actual flow rate of Accufuser is accurate within $\pm 10\%$ of nominal flow rate.

Accuracy can be affected by:

- The residual volume of Accufuser is no more than 2ml
- Mixing drugs with different pH values may cause particles to form. Particles in the medication can occlude the system.

Relying on Accufuser's quality

Accufuser has the following assurance system certificates for the design, manufacture and or, sterilisation and service of disposable and electrical infusion devices.

Accufuser's product certificates for infusion devices are endorsed by the European Union (EC) and the Food and Drugs Agency (FDA) in the USA.

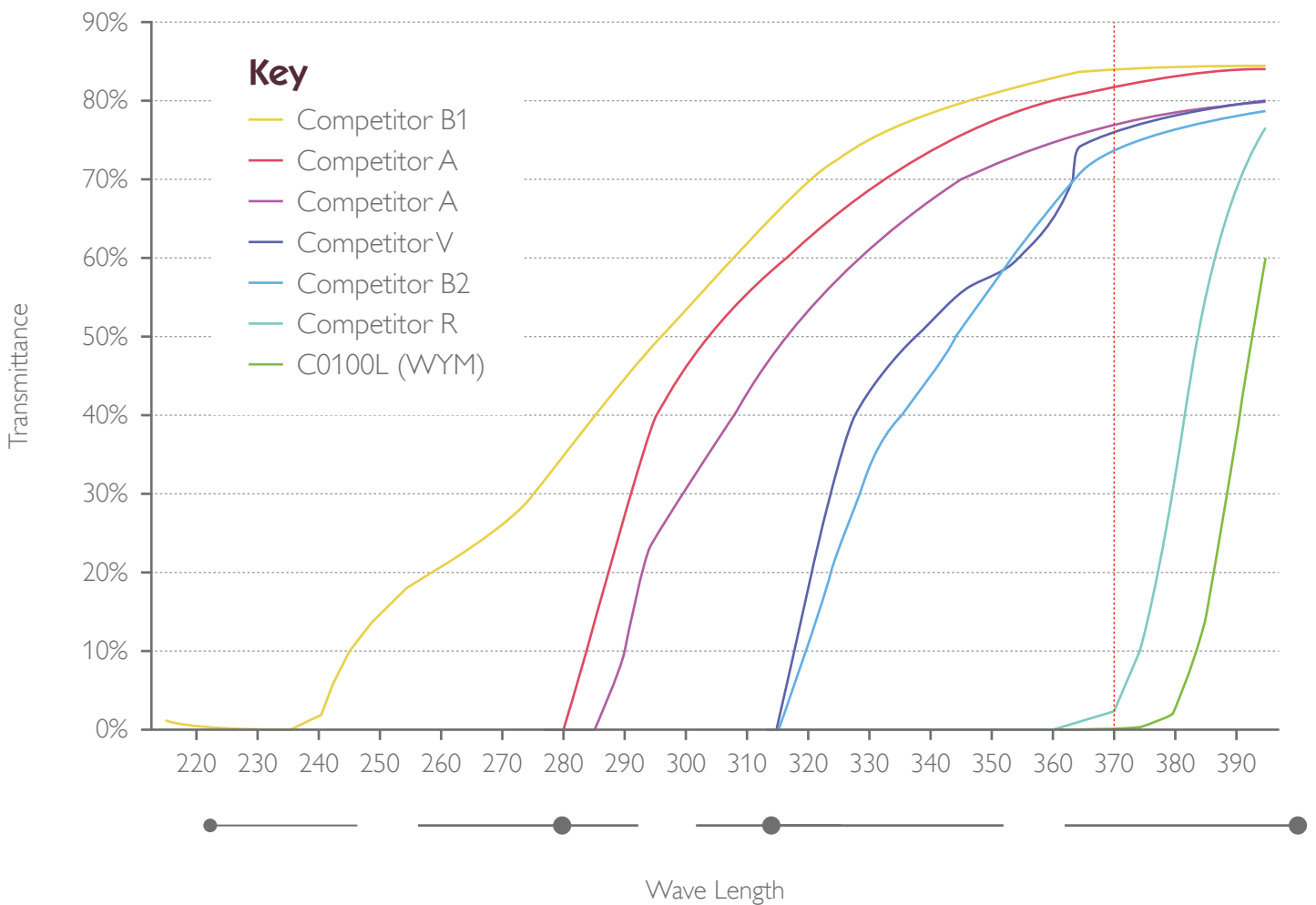


Safe to use

Focusing on safety

UV protection

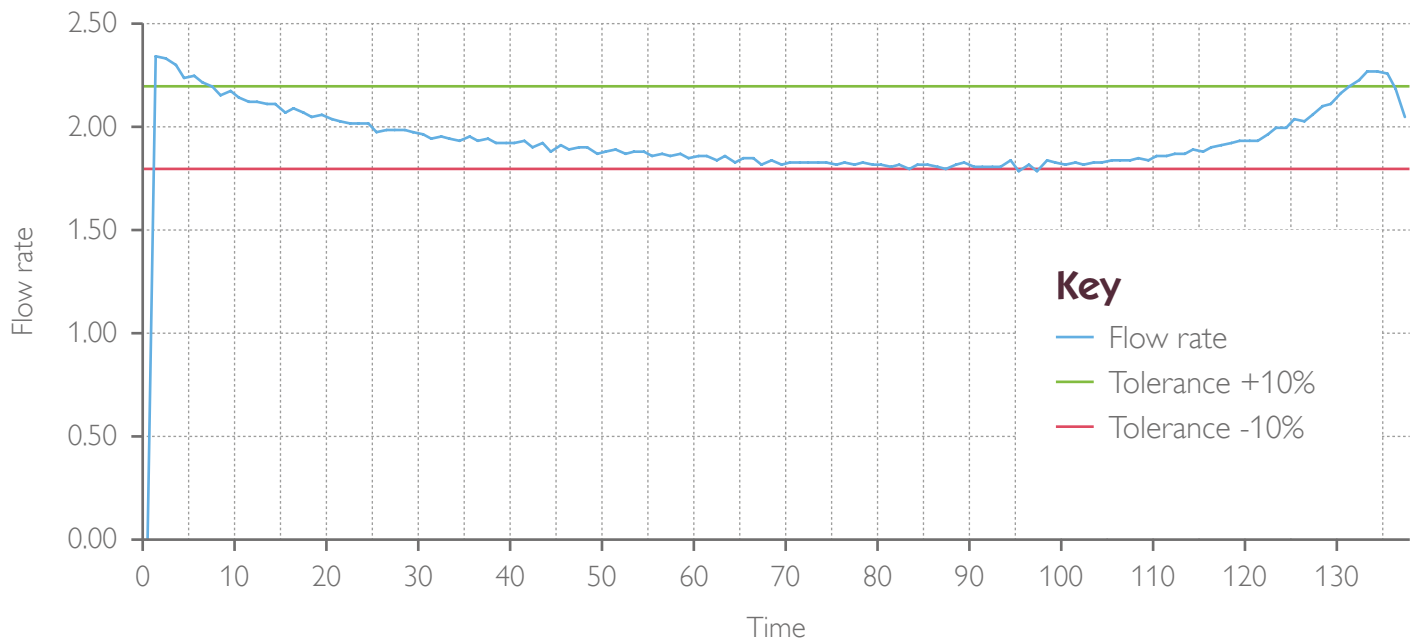
Protection from harmful UV rays is vital to prevent the medication degrading. Accufuser's® outer shell blocks UV-C, UV-B and UV-A radiation up to 370nm.



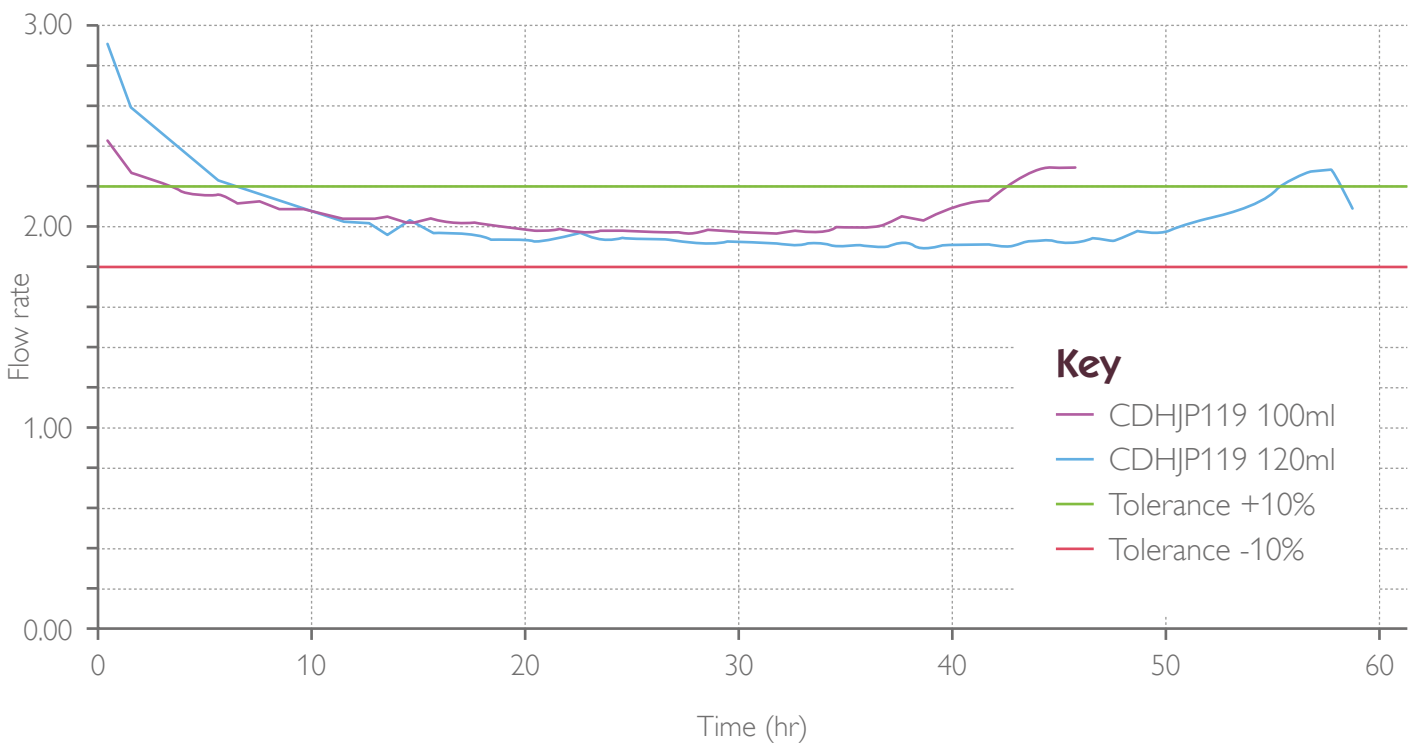
Stable flow rate

In tests, Accufuser® is shown to deliver a stable flow within recommended tolerance rates.

Title: Flow rate test Lot No.: CDLCQ57 Test Volume: 275ml Test Temp: 32°C ± 2°C
 Product: C0020L Test Flow rate: 2.0 ml/hr Test Solution: D5W



Title: Flow rate test when 100ml pump filled with 120ml
 Lot No.: CDLCQ57 Test Temp: 32°C Product: C0020M Test Solution: D5W



Troubleshooting

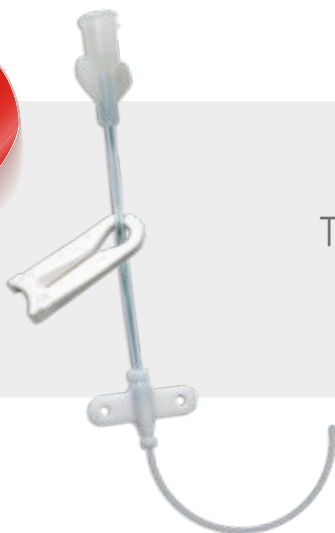
Solutions for basic Accufuser® problems

Complaint or issue	Main cause	Possible solution
Occlusion	Precipitated medication (drug particle)	<p>Occlusion occasionally occurs with Accufuser when it is used with 5FU. Drugs and diluents can form precipitates if they are a different pH or used at low temperature.</p> <p>During PCA use, occlusion may happen when several different medications are combined together.</p> <p>Mixing several medications may result in precipitation due to the different pH value of each drug. For example, morphine chloride (pH of 2.5-5) and Ondansetron (pH of 3.3-4) are soluble in acidic solution but the pH value of the mixture may react differently. Therefore care must be taken to avoid occlusion when using medication with poor solubility or mixing medications and solvents with different pH values.</p>
Slow flow	Precipitated medication (drug particle)	<p>Slow flow can also be caused by undissolved or solidified medication, which partially blocks the capillary. Slow flow can be temporary and may disappear over time. However, it usually leads to occlusion so it is important to make sure the medication is free from solid particles.</p>
Fast flow	Miscalculation	<p>There are four general causes of a faster flow rate</p> <ul style="list-style-type: none"> • Medication with lower viscosity than 5% dextrose in water (D5W) • A temperature greater than 32°C in the restrictor • The reservoir is placed higher than the restrictor • The most common cause of a fast flow is an error in calculating the filling volume.
Balloon leakage	Dew condensation	<p>Dew from the atmosphere is often mistaken as leakage. When Accufuser® is filled with cool or cold medication and then left to reach room temperature, dew can form inside the canister (outside the balloon). The same thing happens when the unit is stored in the fridge and then brought up to room temperature. Dew does not affect the system or the medication. So, if it does occur, Accufuser can be used as normal.</p>
Filling port leakage	Foreign material	<p>The silicone pad in the Accufuser is a one way, check valve. If it becomes contaminated by a needle, glass or rubber particles, the medication will immediately flow backwards. Therefore, it is strongly recommended that users take great care to prevent foreign material from entering the unit when injecting medication through the filling port. The syringe should be filled with medication gently and slowly. Any sudden pushing may force the silicone pad to break away from its correct position. Use the largest syringe possible.</p>

Accufuser is calibrated using 5% dextrose in water as the infusate at $32^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The flow rate may decrease as the fluid viscosity of dextrose increases or the temperature falls below the standard. A variation of $\pm 10^{\circ}\text{C}$ difference in temperature causes a difference in flow rate within ± 10 per cent generally.

Occlusion, or slow flow may occasionally be caused by micro air bubbles, which originate from an imperfectly primed IV filter. The micro air bubbles can block the narrow passage of fluid into the capillary whilst priming. To avoid occlusion, the recommendation is to prime the unit by holding the IV filter with its arrowhead pointed upwards.

**Easy to
insert**



Did you know...

The **Leaderflex** family of 22G Midline catheters offers superior insertion and indwelling characteristics.

Email marketing@vygon.co.uk for further details.

For further information, please contact: vygon@vygon.co.uk

The specifications shown in this leaflet are for information only and are not, under any circumstances, of a contractual nature. This document is intended for use in the UK only.

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