

Infusor Selection

1. How do you select the correct fluorouracil infusor for a particular protocol?

BC Cancer protocols use Baxter Infusor™ devices to deliver fluorouracil (5-FU) chemotherapy as per recommendations from the Institute for Safe Medication Practice (ISMP) Canada. These Infusors are fixed-rate, single-use ambulatory elastomeric infusion devices used to help mitigate rate programming errors associated with programmable and battery-run pumps. They resemble “baby bottles” and consist of a rigid plastic outer case containing a balloon reservoir connected to infusion delivery tubing. The elastomeric balloon is filled with the infusion solution (fluorouracil and D5W), which will push through the tubing at the fixed flow rate as it slowly deflates. See the **Module 1** **Module** and **Checklists** in the [Safe Handling Standards Manual](#) for more information.



Infusors are available in a variety of sizes and flow rates, allowing for infusion durations ranging between 12 hours to 7 days. It is important to select the appropriate infusor required to deliver the dose at a specific rate over the ordered infusion duration. The infusors will deliver the infusion at the labelled flow rate as long as the correct fill

volume parameters, temperature, diluent viscosity, access gauge size, and device placement on patient are adhered to. Infusors can be filled to volumes within 81% of the optimal fill volume (nominal volume) in order to deliver the infusion at the labelled flow rate. However, devices are now labelled with a recommended minimum volume of 90% of the nominal volume to simplify dosing calculations and err on the side of caution.

Infusor Code	Size & Fixed Flow Rate	Nominal Volume	Labelled Minimum Volume	Maximum Volume
SV2	Small Volume 2 mL/hr	96 mL	86 mL	130 mL
LV1.5	Large Volume 1.5 mL/hr	252 mL	227 mL	300 mL
LV2	Large Volume 2 mL/hr	240 mL	216 mL	300 mL
LV5	Large Volume 5 mL/hr	240 mL	216 mL	300 mL
LV10	Large Volume 10 mL/hr	240 mL	216 mL	300 mL

BC Cancer protocols indicate the type of infusor to use. The majority of protocols use LV5 Infusors™, with other Infusor types (SV2, LV1.5, LV2, or LV10) used very rarely. For example, the GIFOLFOX protocol indicates:

fluorouracil	2400 mg/m²	IV over 46 h in D5W to a total volume of 230 mL by continuous infusion at 5 mL/h via Baxter LV5 INFUSOR
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This means that an LV5 Infusor should be used to deliver the fluorouracil dose at a rate of 5 mL/hour over 46 hours. Since Infusors are compounded using D5W as the diluent, the dose of fluorouracil 4000 mg would require:

- rate 5 mL/hour (using LV5) x 46 hours = 230 mL total volume
- fluorouracil 4000 mg (using 50 mg/mL) = 80 mL fluorouracil volume
- total volume minus fluorouracil volume = 150 mL D5W volume

An excel spreadsheet or similar can be used to simplify calculating the correct volumes of 5-FU drug and D5W diluent to use for each device.

2. The Baxter LV5 Infusor™ that we are using to infuse fluorouracil (5-FU) for BC Cancer protocol GIFOLFOX is labelled with 240 mL as the recommended nominal volume for the device. Is it appropriate to only fill it to 230 mL to provide the 5 mL/hr infusion?

Yes, since the BC Cancer GI protocols ask for the 5-FU dose to be infused over **46 hours**, it is appropriate to only fill the device to 230 mL. An LV5 Infusor™ device filled to 240 mL would flow at 5 mL/hour and take approximately **48 hours** to infuse the entire dose.

The volume of 230 mL falls within the specified minimum of 90% of the labelled optimal (nominal) fill volume recommended by Baxter to allow an accurate flow rate of 5 mL/hour. In 2017, Baxter added more volume parameters, and a “no latex” stamp, to the label printed on their elastomeric devices.

For example, the LV5 Infusor™ is labelled with:

- Nominal Volume 240 mL
 - Defined as the optimal fill volume recommended for 5 mL/hour flow rate
- Minimum Volume 216 mL
 - Defined as the minimum fill volume (90% of the nominal volume) recommended to allow 5 mL/hour flow rate
- Maximum Volume 300 mL
 - Defined as the maximum fill volume capacity of the infusor device.

Refer to the **Infusor Rate Errors Checklist** in the [Pharmacy FAQs](#)

References:

1. BC Cancer Pharmacy Practice Standards for Hazardous Drugs (Safe Handling Manual). Module 1. Elastomeric Infusion Devices.
2. Baxter Communication. *Updated Elastomeric Labelling: Minimum and Maximum Fill Volumes*. March 27, 2017