interscience

APPLICATION NOTE

50 ML DISPENSE TEST WITH FLEXIPUMP® PRO

*Unit: **FlexiPump® Pro***

Aim:

Check the dispense accuracy of a 50 mL volume with a **Flexi*Pump*® Pro** peristaltic pump with a dispensing time of less than 4/5 seconds.

Tests conditions:

- **Unit: Flexi*Pump*® Pro**
- **Inner tubing diameter:** 8 mm
- **Pump rotation speed:** 192 rpm
- **Used liquid:** water at room temperature

Protocole:

1. 10 **BagLight®** 100 bags are weighed on a precision scale. During the weighing, each bag is associated with a **BagClip®** 100 closure strip dedicated to it. The mass of the couple bag/closing clip is noted on the bag (M1).

2. **Flexi*Pump*® Pro** is programmed in multi-dose mode (10 doses requested, with a 1 second delay between each dose), at a 192-rpm speed, for a dispensing volume of 50 mL. The used program is calibrated with a volume greater than twice the desired volume.

3. Each of the 10 doses is distributed in a bag. Each bag is closed with the closing clip that was associated with it during the initial weighing (see photo below). Each closed bag with its closing clip is weighed on the same precision balance as before (M2).

4. The difference between M2 and M1 is equal to the distributed volume in each bag (considering that the correction factor Z is equal to 1 at 20°C under 1 atm.).

Bag / Clips	M1 mass (g)	M2 mass (g)	M2-M1 difference (g)	Accuracy (%)
1	11.369	60.658	49.289	1.44
2	11.446	61.608	50.162	0.32
3	11.445	61.343	49.898	0.20
4	11.266	61.240	49.974	0.05
5	11.233	60.926	49.693	0.62
6	11.470	61.484	50.014	0.03
7	11.057	60.563	49.506	0.99
8	11.421	61.231	49.81	0.38
9	11.654	61.141	49.487	1.04
10	11.391	61.073	49.682	0.64
Average	*11.375*	*61.127*	*49.752*	*0.50*

Conclusion:

Flexi*Pump*® Pro is accurate to dispense 50 mL under the conditions outlined above. Note that under these conditions, each distribution lasted 2.7s (not including the time between distributions).

Remark:

It is possible to increase the speed of the pumps in order to reduce the dispensing time. This would make dispensing less accurate.

The time between 2 doses can be decreased to increase the dispensing rate.