Student Learning Advisory Service

Contact us

Please come and see us if you need any academic advice or guidance.

Canterbury

Our offices are next to Santander Bank

Open

Monday to Friday, 09.00 – 17.00
E: learning@kent.ac.uk
T: 01227 824016

Medway

We are based in room G0-09, in the Gillingham Building and in room DB034, in the Drill Hall Library.

Open

Monday to Friday, 09.00 – 17.00
E: learningmedway@kent.ac.uk
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This leaflet has been produced in conjunction with **sigma** Network for Excellence in Mathematics and Statistics Support

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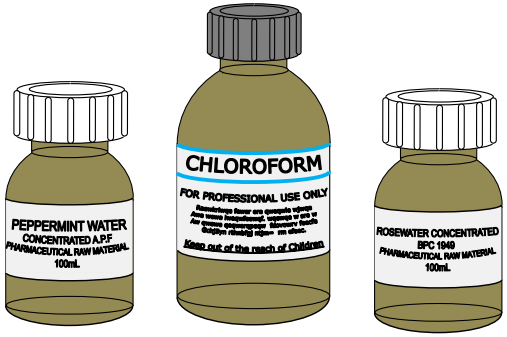
AT A GLANCE/ PHARMACY CALCULATIONS CONCENTRATED WATERS

Calculating the amount of concentrated products required to produce single- or double-strength products.



Concentrated Waters

Concentrated water is diluted to produce single- or double-strength water.

NB:

The pharmaceutical definition of concentrated water is one that is **40X** stronger than single-strength water *****

∴ Single-strength = 1 part concentrated to 39 parts water

Or, = 1 part concentrated in 40 parts total

Concentrated water is **20X** stronger than double-strength water *****

∴ Double-strength = 1 part concentrated to 19 parts water

Or, = 1 part concentrated in 20 parts total

Double-strength water is **2X** stronger than single-strength water *****

∴ Single-strength = 1 part double-strength to 1 part water

Or, = 1 part double-strength in 2 parts total

*** You will need to know and remember these facts**

Example 1

How much concentrated rose water should you use to produce 320mL of single-strength rose water?

Method

Step 1: Concentrated water is 40X stronger than single strength, so use 1/40 of the amount

$$\frac{1}{40} \times 320mL = \mathbf{8mL}$$ ✓

Example 2

How much concentrated peppermint water should you use to produce 1.2L of double-strength peppermint water?

Method

Step 1: Concentrated water is 20X stronger than double strength, so use 1/20 of the amount

$$\frac{1}{20} \times 1200mL = \mathbf{60mL}$$ ✓

Example 3

How much water should you add to 12mL of concentrated chloroform water to produce single-strength chloroform water?

Method

Step 1: Single-strength is 1 part concentrated water to 39 parts water, so add 39 parts

$$39 \times 12mL = \mathbf{468mL}$$ ✓

Example 4

How much water should you add to 64mL of concentrated rose water to produce double-strength rose water?

Method

Step 1: Double-strength is 1 part concentrated water to 19 parts water, so add 19 parts

$$19 \times 64mL = \mathbf{1216mL}$$ ✓

Q1

How much concentrated rose water is required to make 500mL of double-strength rosewater?

Q2

How much concentrated chloroform water is required to make 2.4L of single-strength chloroform water?

Q3

How much water needs to be added to 45mL of concentrated peppermint water to produce double-strength peppermint water?

Q4

A formula calls for 1.25L of single-strength rose water and 75mL of double-strength peppermint water. You only have double-strength rose water and concentrated peppermint water. How much of each should you use?

Q5

A formula calls for 120mL of double strength rose water and 150mL of single strength peppermint water. You only have concentrated rose water and concentrated peppermint water. How much of each should you use?

Answers

Q1 = 25mL. **Q2** = 60mL. **Q3** = 855mL. **Q4** = 625mL double-strength rose water & 3.75mL concentrated peppermint water. **Q5** = 6mL concentrated rose water & 3.75mL concentrated peppermint water.