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
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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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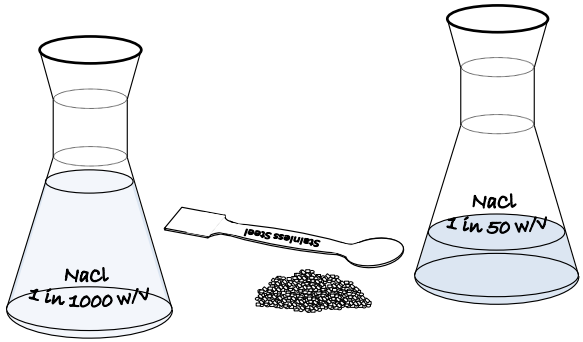
AT A GLANCE/ PHARMACY CALCULATIONS
RATIO STRENGTHS

Calculating the amount of substance in a concentration expressed as a ratio strength



Example 1

How much sodium chloride is contained in 200mL of a 1 part in 500 w/v concentration?

Method

Step 1: A part strength is a fraction.

$$Thus, 1 \text{ part in } 500 = \frac{1}{500}$$

Step 2: By multiplication

$$\frac{1}{500} \times 200mL = \mathbf{0.4}\boldsymbol{g}^{*}$$

*Remember, this is a w/*v* concentration.

Example 2

How much glucose is contained in 0.3L of a 1 part in 20 v/v concentration?

Method

Step 1: By multiplication

$$\frac{1}{20} \times 300mL = \mathbf{15mL}^{*}$$

*Remember, this is a v/*v* concentration.

Example 3

How much chloroform will be needed to make up 150mL of a 1 part in 400 v/v concentration?

Method

Step 1: By multiplication

$$\frac{1}{400} \times 150mL = \mathbf{0.375mL}$$

Example 4

How much sulphate is contained in 2.5L of a 5ppm concentration?

Method

Step 1: By multiplication

$$\frac{5}{1{,}000{,}000} \times 2500mL = \mathbf{12.5mg}$$

Q1

How much active ingredient is contained in the following?

a)	150mL of 1 part in 200 v/v
b)	20mL of 1 part in 10,000 v/v
c)	0.2g of 1 part in 20 w/w
d)	1.2L of 5 parts in 100 v/v
e)	0.2mg of 1 part in 500 w/w
f)	400mL of 0.5ppm w/v
g)	60mL of 25ppm w/v
h)	284mL of 1 part in 20 v/v
i)	454g of 1 part in 800 w/w
j)	1500L of 0.005ppm w/v

Q2

How much active ingredient is contained in the following?

a)	125mL of 1 part in 40 v/v
b)	20mL of 1 part in 1000 v/v
c)	25mg of 1 part in 2000 w/w
d)	0.6L of 15 parts in 1000 v/v
e)	0.65L of 1 part in 250 w/v
f)	330mL of 1 part in 25 v/v
g)	1000mL of 5ppm w/v
h)	660mL of 1 part in 8 v/v
i)	2.5L of 15ppm w/v
j)	1.8g of 1 part in 15 w/w

Answers

Q1 a) = 0.75mL. b) = 2mcL. c) = 10mg. d) = 60mL. e) = 0.4mcg. f) = 0.2mg. g) = 1.5mg. h) = 14.2mL. i) = 567.5mg. j) = 7.5mg.

Q2 a) = 3.125mL. b) = 20mcL. c) = 12.5mcg. d) = 9mL. e) = 2.6g. f) = 13.2mL. g) = 5mg. h) = 82.5mL. i) = 37.5mg. j) = 120mg.