University of Kent | Student Learning Advisory Service

3

AT A GLANCE/ PHARMACY CALCULATIONS PERCENTAGE STRENGTHS

Student Learning Advisory Service

Contact us

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

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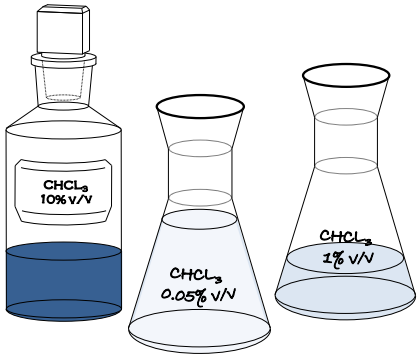
Calculating the amount of substance in a concentration expressed as a percentage strength



Example 1

How much chloroform is contained in 500mL of a 2% v/v concentration?

Method

Step 1: A percentage is a fraction with a base of 100.

$$Thus, 2\% = \frac{2}{100}$$

Step 2: By multiplication

$$\frac{2}{100} \times 500mL = \mathbf{10mL}^{*}$$

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

Example 2

How much sodium chloride is contained in 1.25L of a 0.5% w/v concentration?

Method

Step 1: By multiplication

$$\frac{0.5}{100} \times 1250mL = \mathbf{6.25g}^{*}$$ ✓

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

Example 3

How much glucose will be needed to make up 750mL of a 5% w/v concentration?

Method

Step 1: By multiplication

$$\frac{5}{100} \times 750mL = \mathbf{37.5g}$$ ✓

Alternative Method

Step 1: Convert the % into a decimal

$$5\% = \frac{5}{100} = 0.05$$

Step 2: By multiplication

$$0.05 \times 750mL = \mathbf{37.5g}$$ ✓

Q1

How much active ingredient is contained in the following?

a)	100mL of 2% v/v
b)	100mL of 0.5% v/v
c)	120mL of 0.05% w/v
d)	1.5L of 0.2% w/v
e)	5mL of 0.04% v/v
f)	100mL of 0.005% v/v
g)	50mg of 5% w/w
h)	120g of 0.2% v/w
i)	1250mL of 20% v/v
j)	50mcL of 0.2% w/v

Q2

How much active ingredient is contained in the following?

a)	568mL of 5% v/v
b)	80mL of 2.5% v/v
c)	15mL of 0.01% w/v
d)	0.4L of 0.25% w/v
e)	1500L of 0.2% w/v
f)	10mL of 0.02% v/v
g)	454g of 15% w/w
h)	45mg of 0.02% w/w
i)	75mcL of 0.5% w/v
j)	1500mcL of 0.2% w/v

Answers

Q1 a) = 2mL. b) = 0.5mL. c) = 60mg. d) = 3g. e) = 2mcL. f) = 5mcL. g) = 2.5mg. h) = 0.24mL. i) = 250mL. j) = 0.1mg

Q2 a) = 28.4mL. b) = 2mL. c) = 1.5mg. d) = 1g. e) = 3kg. f) = 2mcL. g) = 68.1g. h) = 9mcg. i) = 375mcg. j) = 3mg.