

Calculations

- BreeBio tutorial
- M, %, mM, μ M etc.
- 1 mL = 1,000 μ L



SCAN ME

Breebio Youtube
calculation video



SCAN ME

Breebio Practical resource page;
Sem 1 lab manual calculations
worked through

$$1\text{M} = \text{M.W. g/L}$$

M.W. = molecular weight

$$1\% = 1\text{g}/100\text{mL}$$

$$\frac{\text{What you want (units)}}{\text{What you have (units)}} \times \text{Volume you want it in}$$

250mL of 5mM NaCl MW 58.44

$$1\text{M} = \text{MW g/L}$$

$$1\text{M} = 58.44 \text{ g/L}$$

$$1\text{mM} = 58.44 \text{ mg/L}$$

$$5\text{mM} = 292.2 \text{ mg/L}$$

$$5\text{mM} = 73.05 \text{ mg/250mL}$$

(or 0.07305 g/250mL)

$$5\text{mM} = 5 \times 10^{-3} \text{ M}$$

$$1\text{M} = 58.44 \text{ g/L}$$

$$5 \times 10^{-3} \text{ M} = \frac{5 \times 10^{-3} \text{ M} \times 58.44\text{g/L}}{1}$$
$$= 0.2922\text{g/L}$$

$$250\text{mL} = \frac{250}{1000}$$

$$= 0.25\text{L}$$

$$1\text{L} = 0.2922\text{g}$$

$$0.25\text{L} = \frac{0.25\text{L} \times 0.2922\text{g}}{1}$$
$$= 0.07305\text{g}$$

$$250\text{mL} = \frac{250}{1000}$$

$$= 0.25\text{L}$$

$$5\text{mM} = 5 \times 10^{-3} \text{ M}$$

$$5 \times 10^{-3} \text{ M} = \frac{\text{moles of NaCl}}{0.25\text{L}}$$

$$\text{moles of NaCl} = 1.25 \times 10^{-3} \text{ moles}$$

$$\text{Mass of NaCl} = 58.44 \times 1.25 \times 10^{-3}$$
$$= 0.07305 \text{ g}$$

$$\text{moles} = \text{mass} / \text{mol. wt.}$$

$$0.005 \text{ M} = \text{mass} / 58.44 \text{ g/mol.}$$

$$\text{Mass} = 0.2922 \text{ g (for 1 Litre since M = mol/L)}$$

$$\text{For 250 mL} = 0.2922 \text{ g} / 4 = 0.07305 \text{ g}$$