



MAKING DILUTIONS

To make dilutions from one concentration to another, use the following equation:

$$C_1V_1 = C_2V_2$$

where:

C_1 = Desired concentration (mg/L) of solution to be prepared

V_1 = Final volume (ml) of solution to be prepared

C_2 = Concentration (mg/L) of beginning solution e.g. stock calibrant

V_2 = Volume (ml) of beginning solution to be used

Rearranging the equation to solve for V_2 yields:

$$V_2 = \frac{C_1V_1}{C_2}$$

For example, to prepare a 1.0 mg/L calibrant from a 1000mg/L stock solution, use 0.1 ml (100 μ l) of the stock calibrant diluted to 100 ml final volume.

$$V_2 = \frac{(1.0 \text{ mg/L})(100 \text{ ml})}{1000\text{mg/L}} = 0.1 \text{ ml}$$

NOTE: As long as the volume and concentration units are consistent from one side of the equation to the other, they can be anything you like, not just mg/L and ml.