Determining Dilution Series

This technote provides information about the concentration range spanned and preparation calculations for serial dilutions. *Figure 1* illustrates the range of concentrations spanned by a series of twelve dilutions with commonly utilized dilution factors. The following also provides calculations for the preparation of a serial dilution factor. *Bold* indicates standard calculations regardless of the dilution factor used. Refer to *Figure 2* to clarify the experimental set up.

Sample Experiment Example:

- 3 mL Sample Volume
- 2.5 fold serial dilution

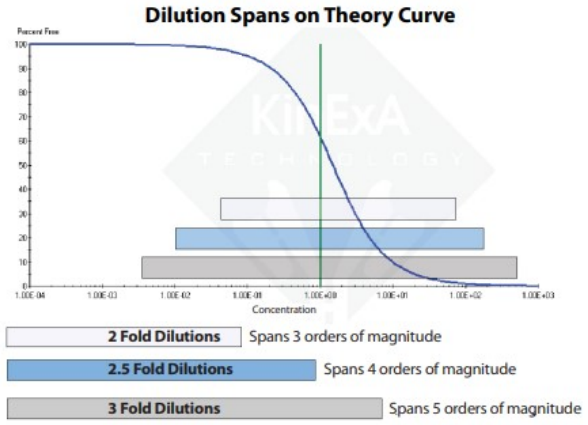

Figure 1.

Prepare Serial Dilutions:

- Calculate the total *Sample Volume* necessary to run each sample.

- Calculate the *Starting Volume* for tube 1:

$$\textbf{Starting Volume} = \frac{\textbf{Sample volume x Dilution Factor}}{\textbf{(Dilution Factor – 1)}}$$

Starting Volume = (3 mL x 2.5) / (2.5 – 1)
Starting Volume = 5 mL

- Calculate the *Pipet Transfer Volume:*

Pipet Transfer Volume = Starting Volume – Sample Volume

Pipet Transfer Volume = 5 mL – 3 mL
Pipet Transfer Volume = 2 mL

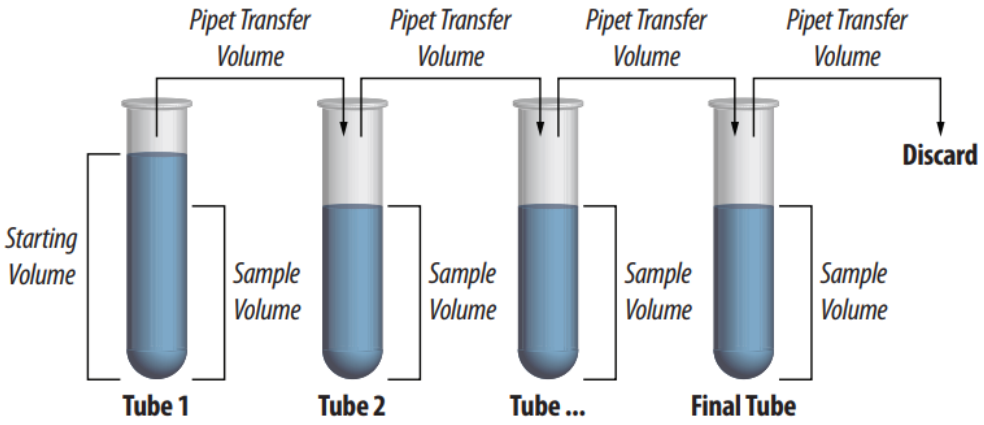

Figure 2.