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 provides calculation for 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

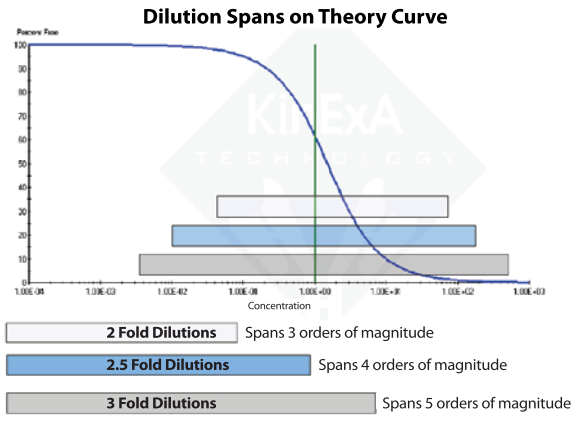

Figure 1.

To Prepare Serial Dilutions:

- Calculate the total *Sample Volume* necessary to run each sample.
- Calculate the *Starting Volume* for tube 1:

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

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

- Calculate the *Pipet Transfer Volume:*

$$\textbf{\textit{Pipet Transfer Volume}} = \textbf{\textit{Starting Volume}} - \textbf{\textit{Sample Volume}}$$

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

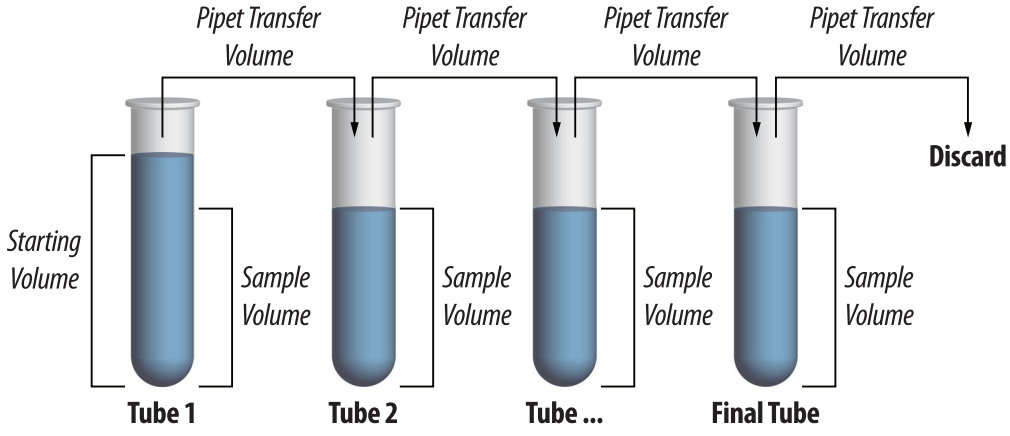

Figure 2.