

# Dilutions

Chemistry

The dilution equation, and serial dilutions.

**The number of moles is unchanged by dilution.**

$$c_1V_1 = c_2V_2$$

**25 cm<sup>3</sup> of 2.0 M diluted to 100 cm<sup>3</sup>**

**0.50 M**

Four-fold dilution.

**Dilution factor 10**

**Concentration ÷ 10**

**Serial 1:10, three times**

**1000-fold overall**

Factors multiply.

## THE COMMON MISTAKE

✗ **Adding solvent to reach a total volume by measurement**

✓ **Making up to the mark in a volumetric flask**

Volumes are not always additive, and only a volumetric flask defines the final volume accurately.

Serial dilution reaches very low concentrations accurately, because each step is a manageable ratio.