Answer on Question #49794 – Chemistry – Physical Chemistry

**Question:**

Lambert-beer law with brief explanation.

Answer:

The Beer-Lambert Law

The absorption of photons of light is described by the Beer-Lambert Law, a relationship that indicates a decrease in intensity as a beam passes through a medium that can absorb it. Consider a parallel beam of monochromatic light of initial intensity, I_o, passing through a homogeneous absorbing medium
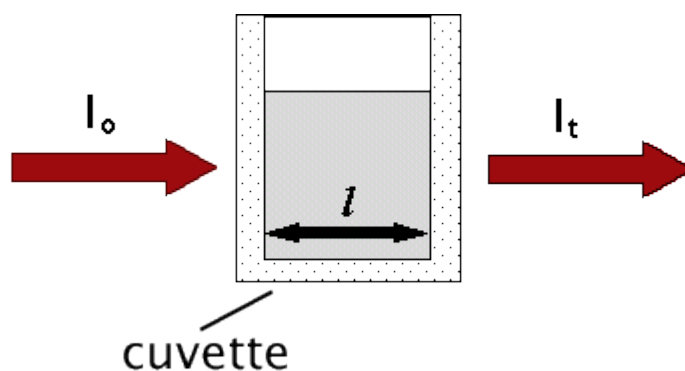
Schematic representation showing that light of initial intensity, I_o, passing through an absorbing medium in a cuvette with light path, l, will emerge with a final intensity, I_t

Another way of expressing this information is to use the Beer-Lambert Law. It states that the absorbance, A, of a molecular species is linearly related to the path length (centimeter), **l**, the absorber concentration (moles/liter), **c**, and the proportionality constant, ε, called the molar extinction coefficient of the absorbing molecular species (liters/mole-cm) [a measure of how strongly a chemical species absorbs light at a given wavelength].

$$A = \varepsilon\, cl$$