

### Answer on Question #63870, Chemistry / General Chemistry

You are provided with pure copper sulphate crystal. Using Beer-Lambert law, how can you determine the concentration of a test solution of copper sulphate? Explain in a detailed way.

**Answer:**

The law of the Bouguer – Lambert – Bera

$$I = I_0 e^{-\alpha l C}$$

A quantitative characteristic of light attenuation by an absorbing medium is the optical density of A. For non-reflecting layer it is equal to:

$$A = \lg \frac{I_0}{I}$$

In accordance with the law of the Bouguer-Lambert-Bera will receive:

$$A = 0.4343 \alpha l C$$

From the equation it is seen that, if the law of the Bouguer-Lambert-Bera, the optical density is proportional to the concentration.

According to Beer's law, the colored solution with higher concentration shows more absorbance to light and transmits less than a colored solution with lower concentration. This more or less absorbance of light can be measured by use of spectrometer.