CHAPTER OVERVIEW

2: Ultraviolet/Visible Absorption Spectroscopy

Learning Objectives

After completing this unit the student will be able to:

- Compare and contrast atomic and molecular spectra.
- Explain why atomic spectra consist of lines whereas molecular spectra at room temperature are broad and continuous.
- Justify the difference in molecular spectra at room temperature and 10 K.
- Describe the cause of Doppler broadening.
- Determine the effect of conjugation on a UV/Vis absorption spectrum.
- Determine the effect of non-bonding electrons on a UV/Vis absorption spectrum.
- Determine the effect of solvent on the energy of $n - pi^*$ and $\pi - \pi^*$ transitions.
- Evaluate the utility of UV/Vis spectroscopy as a qualitative and quantitative method.
- Describe a procedure by which UV/Vis spectroscopy can be used to determine the pKa of a weak acid.

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