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1.1 Basic Concepts and Principle of Spectrophotometry

Light is a kind of electromagnetic wave. The light can be seen by our naked eyes is really a very small portion of the electromagnetic spectrum (Figure 1-1) within the wavelength range between approximately 380 nm and 760 nm. The visible light could be split into many colors by a prism. Each color is signed by the wavelength of light. Any solution that contains a substance that absorbs the visible light will appear a color. Light with wavelengths longer than 760 nm or shorter than 380 nm is invisible. Ultraviolet is a region of the electromagnetic spectrum that has a wavelength range from 375 nm to 12.5 nm. Ultraviolet-Visible spectrophotometry using lights in the visible range and adjacent near ultraviolet (UV) range (200 ~ 375 nm) is discussed in this chapter.

1.1.1 Absorption spectrum

Each substance has its own characteristic spectrum. The light absorption of the same substance at different wavelengths is different, and light absorption of different substances at the same wavelength is also different. Spectrophotometry is based on this selective absorption of