

The wavelength limits of visible radiation are considered to be 400 nm to 700 nm on the blue and red edge respectively. Calculate the value that corresponds to each of these in cm^{-1} .

Solution: The conversion from nm to cm^{-1} is a common spectroscopic conversion.

$$\tilde{\nu} = \frac{10^7}{\lambda}$$

$$\tilde{\nu} = \frac{10^7}{400 \text{ nm}} = 25,000 \text{ cm}^{-1}$$

$$\tilde{\nu} = \frac{10^7}{700 \text{ nm}} = 14,285 \text{ cm}^{-1}$$

Note: there are 10^7 nm in a cm.

400 nm corresponds to _____ cm^{-1} .

700 nm corresponds to _____ cm^{-1}