Answer on the question #59714, Chemistry / Other

Question:
What amount of energy is contained in a single photon of orange light with a frequency of 5.00 × 1014 s–1?

Solution:
The link between the energy of photon and frequency is:

$$E = h\nu,$$

where h is Planck's constant, ν is frequency and E is energy.

$$E = 6.63 \cdot 10^{-34}(m^2 \cdot kg \cdot s^{-1}) \cdot 5 \cdot 10^{14}(s^{-1}) = 3.32 \cdot 10^{-19}J$$

Answer: $3.32 \cdot 10^{-19}J$