Answer on Question #80583 – Chemistry – General Chemistry

E = N*h*V, where N is number of Avogadro = 6.022*10(^23) mole(^-1), h is Planka's const = 6.63*10(-34) Joule/sec and V is frequency.

V = c/l, where c is speed of light = 3*10(^8) m/sec, l is length of wave.

At first, let's find V, and then solve the problem:

1) V = c/l = 3*10(^8)/459*10(^-9) = 0.00654*10(^17).
2) E = N*h*V = 6.023*10(^23)*6.63*10(^-34)*0.00654*10(^17) ~ 0.26*10(^6) J ~ 260000 J.
   Answer: E = 260000 J.

Answer provided by www.AssignmentExpert.com