Answer on question #68649, Physics / Molecular Physics — Thermodynamics

Question   10 gram of natural gass which contains CH4 and C2H4.when this natural gass is burn in the presence of oxygen then from it we can get some water and 29 gram CO2 gass.then what is the weight of water?

Solution   It is equal to speed of light divided by wavelength: First of all we find mass of C in natural gas. We can find it from mass of CO_2 as mass part of C is $M(C)/M(CO_2) = 12/(12 + 2 \cdot 16) \approx 0.27$. So we have

$$m(C) = 0.27 \cdot 29 = 7.83\,g$$

Now we know mass of H is natural gas

$$m(H) = 10 - m(C) = 2.17\,g$$

From this we find mass of water, as we know that hydrogen makes 1/8 of it:

$$m(H_2O) = m(H) \cdot 9 = 19.53\,g$$