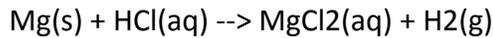


Answer on Question #56532 - Chemistry – General chemistry

Question

One reaction that produces hydrogen gas can be represented by the following unbalanced chemical equations:

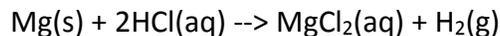


- what mass of HCl is consumed by the reaction of 2.50 moles of magnesium?
- What mass of each product is produced in part a?

I do not know where to even start to figure this problem out, except balancing the formula. I did some math and I have an answer but I am not sure if it is right or not.

Answer:

Balanced reaction equation:



a. 2.50 moles of magnesium react with 5.00 moles of hydrogen chloride. Therefore the mass of HCl consumed by the reaction of 2.50 moles of magnesium is:

$$m(\text{HCl}) = n(\text{HCl}) * M(\text{HCl}) = 5.00 \cdot 36.5 = 182.5 \text{ g}$$

b. If 2.50 moles of magnesium react, 2.50 moles of magnesium chloride and 2.50 moles of hydrogen are produced. Therefore the mass of MgCl_2 produced is:

$$m(\text{MgCl}_2) = n * M = 2.50 \cdot 95.3 = 238.3 \text{ g}$$

The mass of H_2 produced is:

$$m(\text{H}_2) = n(\text{H}_2) * M = 2.50 * 2.0 = 5.00 \text{ g}$$