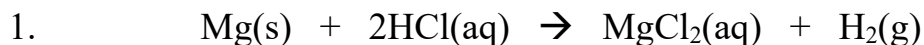


Stoichiometry: Mole to Mass Problems

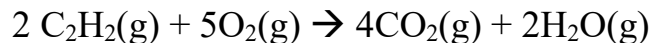
- How many grams of HCl are consumed by the reaction of 2.50 moles of magnesium?
- What is the mass in grams of H₂ gas when 4.0 moles of HCl is added to the reaction?

2. Acetylene gas (C₂H₂) is produced as a result of the following reaction.

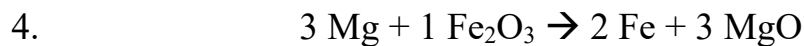


- If 3.20 moles of CaC₂ are consumed in this reaction, how many grams of H₂O are needed?
- How many grams of Ca(OH)₂ would be formed with 3.20 moles of CaC₂?

3. Acetylene gas, C₂H₂, is used in welding, produces an extremely hot flame when it burns in pure oxygen according to the following reaction.

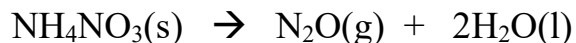


How many moles of water (H₂O) are produced when 25.0 grams of C₂H₂ burns completely?



How many moles of iron, Fe, are produced with 25.0 grams of magnesium, Mg?

5. Laughing gas (nitrous oxide, N₂O) is sometimes used as an anesthetic in dentistry.



- How many moles of NH₄NO₃ are required to produce 33.0g of N₂O?
- How many moles of water are produced with 45.0g of N₂O?

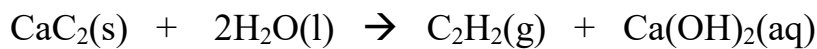
Answers to Stoichiometry: Mole to Mass Problems

1. Hydrogen gas can be produced through the following reaction.



- c. How many grams of HCl are consumed by the reaction of 2.50 moles of magnesium? **182g HCl**
- d. What is the mass in grams of H₂ gas when 4.0 moles of HCl is added to the reaction? **4.0g H₂**

2. Acetylene gas (C₂H₂) is produced as a result of the following reaction.

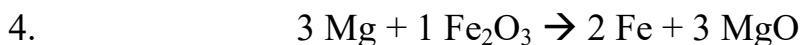


- c. If 3.20 moles of CaC₂ are consumed in this reaction, how many grams of H₂O are needed? **115g H₂O**
- d. How many grams of Ca(OH)₂ would be formed with 3.20 moles of CaC₂?
237g Ca(OH)₂

3. Acetylene gas, C₂H₂, is used in welding, produces an extremely hot flame when it burns in pure oxygen according to the following reaction.

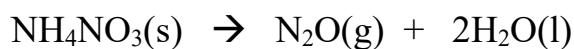


How many moles of water (H₂O) are produced when 25.0 grams of C₂H₂ burns completely? **0.960 moles H₂O**



How many moles of iron, Fe, are produced with 25.0 grams of magnesium, Mg? **0.686 mole Fe**

5. Laughing gas (nitrous oxide, N₂O) is sometimes used as an anesthetic in dentistry. It is produced when ammonium nitrate is decomposed according to the following reaction.



- c. How many moles of NH₄NO₃ are required to produce 33.0g of N₂O? **0.749 mole NH₄NO₃**
- d. How many moles of water are produced with 45.0g of N₂O? **2.04 mole H₂O**

