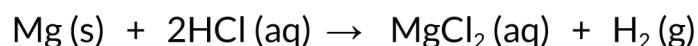


WHAT'S IN A MOLE WORKSHEET

Answer the following questions.

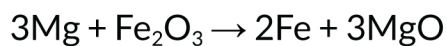
1) How many molecules are present in 1.00 mole? What is the value of Avogadro's Number?

2) Hydrogen gas can be produced by the reaction.



- What is the mass of HCl consumed by the reaction of 2.5 moles of Mg?
- What is the mass in grams of H₂ when 4 moles of HCl is added to the reaction?

3) How many moles of Fe are produced with 25 g of Mg?



Name : _____

Date : _____

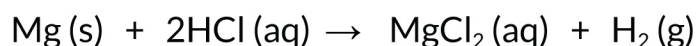
WHAT'S IN A MOLE WORKSHEET

Answers

1) How many molecules are present in 1.00 mole? What is the value of Avogadro's Number?

1 mole contains 6.023×10^{23} molecules. This value is termed as Avogadro's Number and uses the unit 'mol⁻¹'.

2) Hydrogen gas can be produced by the reaction.



a. What is the mass of HCl consumed by the reaction of 2.5 moles of Mg?

b. What is the mass in grams of H₂ when 4 moles of HCl is added to the reaction?

a. 1 mole of Mg reacts with 2 moles of HCl

2.5 moles of Mg react with 5 moles of HCl

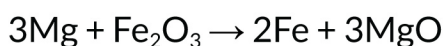
5 moles of HCl weigh = $5 \times \text{Molar mass of HCl} = 5 \times 36.5 = 182.5$ grams

b. 2 moles of HCl react with Mg to produce 1 mole of H₂

4 moles of HCl react with Mg to produce 2 moles of H₂

2 moles of H₂ weigh 4 grams

3) How many moles of Fe are produced with 25 g of Mg?



3 moles of Mg produces 2 moles of Fe

72 g of Mg produces 111.69 g of Fe

25 g of Mg produces 38.7 g of Fe

Number of moles of Fe = 0.69 moles

Name : _____

Date : _____