Moles Worksheet

Answer the following.

1. How many moles are in 40 grams of water?

2. How many atoms are in 40 grams of calcium?

3. How many moles are in 88.88 grams of calcium?

4. What is the percent hydrogen in water?

5. How many moles are in 9.8 grams of calcium?

6. How many atoms are in 5.55 moles of silver?

7. What is the molar mass of sodium carbonate?

8. How many grams is 1.25 moles of potassium bromide?

Moles Worksheet

Answers

1. How many moles are in 40 grams of water?

   The number of moles present in 40 grams of water = 40g H_2O/18g H_2O = 2.22 moles

2. How many atoms are in 40 grams of calcium?

   6.023×10^{23}

   This is because 40 grams of calcium is the weight of a single mole of calcium and a mole of calcium consists of 6.023×10^{23}.

3. How many moles are in 88.88 grams of calcium?

   The number of moles present in 88.88 grams of calcium = 88.88g Ca/40g Ca = 2.22 moles

4. What is the percent hydrogen in water?

   There are two hydrogen atoms in water (2 grams) and the molar mass of H_2O = 18 grams

   So % H in H_2O is = (2/18) x 100% = 11.11%

5. How many moles are in 9.8 grams of calcium?

   The number of moles present in 9.8 grams of calcium = 9.8g Ca/40g Ca = 0.245 moles

6. How many atoms are in 5.55 moles of silver?

   The number of atoms present in 5.55 moles of silver = $5.55 \times 6.023 \times 10^{23} = 3.3 \times 10^{24}$

7. What is the molar mass of sodium carbonate?

   The molar mass of Na_2CO_3 = 2 x molar mass of Na + molar mass of C + 3 x molar mass of O = 2 x 23 + 12 + 3 x 16 = 46 + 12 + 48 = 106g/mol

8. How many grams is 1.25 moles of potassium bromide?

   The weight of 1.25 moles of KBr in grams = 1.25 x 119 grams = 148.75 grams