

## Study Guide Moles

### Show All Work

What is the molar mass of  $\text{CuNO}_3$  ?

$$\begin{aligned} \text{Cu} &= 63.55 \\ \text{N} &= 14 \\ \text{O} &= 16 \times 3 \\ \text{Total:} &= 125.55 \text{ g/moles} \end{aligned}$$

How many moles in 60 grams of KOH?

$$\begin{aligned} \text{K} &= 39.1 \\ \text{O} &= 19 \\ \text{H} &= 1 \\ \text{Total:} &= 56.1 \end{aligned} \quad 60\text{g} \times \frac{1 \text{ mol}}{56.1\text{g}} = 1.07 \text{ moles}$$

How many grams in 5 moles of  $\text{H}_2\text{O}$  ?

$$\begin{aligned} \text{H} &= 1 \times 2 \\ \text{O} &= 16 \\ \text{Total:} &= 18\text{g} \end{aligned} \quad 5 \text{ moles} \times \frac{18\text{g}}{1 \text{ moles}} = 90\text{g}$$

1.5 moles of  $\text{N}_2$  gas = \_\_\_\_\_ L of  $\text{N}_2$  gas? 1 mole = 22.4 L

$$1.5 \text{ moles} \times \frac{22.4 \text{ L}}{1 \text{ mole}} = 33.6\text{L}$$

100 L of HF gas = \_\_\_\_\_ moles of HF gas? 1 mole = 22.4 L

$$100 \text{ L} \times \frac{1 \text{ mole}}{22.4 \text{ L}} = 4.46 \text{ mole}$$

How many moles in  $3.01 \times 10^{23}$  atoms of Hg? 1 mole =  $6.02 \times 10^{23}$

$$3.01 \times 10^{23} \times \frac{1 \text{ mole}}{6.02 \times 10^{23}} = 0.5 \text{ moles}$$

How many atoms in 5 moles of Li? 1 mole =  $6.02 \times 10^{23}$

$$5 \text{ moles} \times \frac{6.02 \times 10^{23} \text{ atoms}}{1 \text{ mole}} = 3.01 \times 10^{24} \text{ atoms}$$

Name \_\_\_\_\_ Per. \_\_\_ Date \_\_\_\_\_

## Homework Moles

### Show All Work

What is the molar mass of NaOH ?

Na = 22.99  
O = 16  
H = 1  
Total: 39.99g

How many moles in 100 grams of KOH?

K = 39.1  
O = 19  
H = 1  
Total: 56.1

$$100\text{g} \times \frac{1 \text{ mol}}{56.1\text{g}} = 1.78 \text{ moles}$$

How many grams in 10 moles of H<sub>2</sub>O ?

$$10 \text{ moles} \times \frac{18\text{g}}{1 \text{ mole}} = 180\text{g}$$

4.5 moles of N<sub>2</sub> gas = \_\_\_\_\_ L of N<sub>2</sub> gas? 1 mole = 22.4 L

$$4.5 \text{ mole} \times \frac{22.4\text{L}}{1 \text{ mole}} = 100.8 \text{ L}$$

50 L of HF gas = \_\_\_\_\_ moles of HF gas? 1 mole = 22.4 L

$$50\text{L} \times \frac{1 \text{ mole}}{22.4 \text{ L}} = 2.23 \text{ moles}$$

How many moles in  $9.03 \times 10^{23}$  atoms of Hg? 1 mole =  $6.02 \times 10^{23}$

$$9.03 \times 10^{23} \text{ atoms} \times \frac{1 \text{ mole}}{6.02 \times 10^{23} \text{ atoms}} = 1.5 \text{ moles}$$

How many atoms in 3 moles of Li? 1 mole =  $6.02 \times 10^{23}$

$$3 \text{ moles} \times \frac{6.02 \times 10^{23} \text{ atoms}}{1 \text{ mole}} = 1.806 \times 10^{24} \text{ atoms}$$