

KEY

1 mol = molar mass from P.T.

Mole Conversion Practice (one step)

Mass to Mole, Mole to Mass

Answer the following questions with the correct amount of significant figures. Make sure that all problems are set-up using the dimensional analysis (goal post) method and show all your work and units.

1. What is the mass of 1.0 mole of nitrogen?

$$\frac{1.0 \text{ mol N} \quad | \quad 14.01 \text{ g N}}{1 \text{ mol N}} = \boxed{14 \text{ g N}}$$

2. What is the mass 1.50 moles of neon?

$$\frac{1.50 \text{ mol Ne} \quad | \quad 20.18 \text{ g Ne}}{1 \text{ mol Ne}} = \boxed{30.3 \text{ g Ne}}$$

3. How many moles are in 45.98 g of sodium?

$$\frac{45.98 \text{ g Na} \quad | \quad 1 \text{ mol Na}}{22.99 \text{ g Na}} = \boxed{2.000 \text{ mol Na}}$$

4. What is the mass of 14.5 moles of Cu?

$$\frac{14.5 \text{ mol Cu} \quad | \quad 63.55 \text{ g Cu}}{1 \text{ mol Cu}} = \boxed{921 \text{ g Cu}}$$

5. Calculate the number of moles in 64.1g of Al.

$$\frac{64.1 \text{ g Al} \quad | \quad 1 \text{ mol Al}}{26.98 \text{ g Al}} = \boxed{2.38 \text{ mol Al}}$$

6. What is the mass of 7.50 moles of sulfur dioxide? (SO_2)

$$\frac{7.50 \text{ mol SO}_2 \quad | \quad 64.06 \text{ g SO}_2}{1 \text{ mol SO}_2} = \boxed{480. \text{ g SO}_2}$$

7. How many grams of potassium sulfate are there in 25.3 moles?

$$\frac{25.3 \text{ mol K}_2(\text{SO}_4) \quad | \quad 174.26 \text{ g K}_2(\text{SO}_4)}{1 \text{ mol K}_2(\text{SO}_4)} = \boxed{4410 \text{ g K}_2(\text{SO}_4)}$$

$\text{K}^+ (\text{SO}_4)^{2-} \quad \text{K}_2(\text{SO}_4)$

8. How many moles are in 67.5g of carbon dioxide? (CO_2)

$$\frac{67.5 \text{ g CO}_2 \quad | \quad 1 \text{ mol CO}_2}{44.01 \text{ g CO}_2} = \boxed{1.53 \text{ mol CO}_2}$$

9. What is the mass of 7.22 moles of Sulfur?

$$\frac{7.22 \text{ mol S} \quad | \quad 32.06 \text{ g S}}{1 \text{ mol S}} = \boxed{231 \text{ g S}}$$

10. How many moles are there in 250.0 grams of Na_3PO_4 ?

$$\frac{250.0 \text{ g Na}_3\text{PO}_4 \quad | \quad 1 \text{ mol Na}_3\text{PO}_4}{163.94 \text{ g Na}_3\text{PO}_4} = \boxed{1.525 \text{ mol Na}_3\text{PO}_4}$$

Na_3PO_4
 $3(22.99)$
 $1(30.97)$
 $4(16.00)$