

## Mole Calculation Worksheet

Key

1. How many moles are in 15 grams of lithium?

$$\frac{15 \text{ g Li}}{6.94 \text{ g Li}} \Bigg| \frac{1 \text{ mol Li}}{6.94 \text{ g Li}} = 2.16 \text{ mol Li}$$

2. How many grams are in 2.4 moles of sulfur?

$$\frac{2.4 \text{ mol S}}{1 \text{ mol S}} \Bigg| \frac{32.07 \text{ g S}}{1 \text{ mol S}} = 76.94 \text{ g S}$$

3. How many moles are in 22 grams of argon?

$$\frac{22 \text{ g Ar}}{39.94 \text{ g Ar}} \Bigg| \frac{1 \text{ mol Ar}}{39.94 \text{ g Ar}} = 0.55 \text{ mol Ar}$$

4. How many grams are in 88.1 moles of magnesium?

$$\frac{88.1 \text{ mol Mg}}{1 \text{ mol Mg}} \Bigg| \frac{24.30 \text{ g Mg}}{1 \text{ mol Mg}} = 2140.83 \text{ g Mg}$$

5. How many moles are in 2.3 grams of phosphorus?

$$\frac{2.3 \text{ g P}}{30.97 \text{ g P}} \Bigg| \frac{1 \text{ mol P}}{30.97 \text{ g P}} = 0.074 \text{ mol P}$$

6. How many grams are in 11.9 moles of chromium?

$$\frac{11.9 \text{ mol Cr}}{1 \text{ mol Cr}} \Bigg| \frac{51.99 \text{ g Cr}}{1 \text{ mol Cr}} = 618.68 \text{ g Cr}$$

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

$$\frac{9.8 \text{ g Ca}}{40.07 \text{ g Ca}} \Bigg| \frac{1 \text{ mol Ca}}{40.07 \text{ g Ca}} = 0.24 \text{ mol Ca}$$

8. How many grams are in 238 moles of arsenic?

$$\frac{238 \text{ mol As}}{1 \text{ mol As}} \Bigg| \frac{74.92 \text{ g As}}{1 \text{ mol As}} = 17830.96 \text{ g As}$$

9. How many grams are in 4.5 moles of sodium fluoride?

$$\frac{4.5 \text{ mol NaF}}{1 \text{ mol NaF}} \Bigg| \frac{41.98 \text{ g NaF}}{1 \text{ mol NaF}} = 188.91 \text{ g NaF}$$

10. How many moles are in 98.3 grams of aluminum hydroxide?

$$\frac{98.3 \text{ g Al(OH)}_3}{177.95 \text{ g Al(OH)}_3} \Bigg| \frac{1 \text{ mol Al(OH)}_3}{177.95 \text{ g Al(OH)}_3} = 1.26 \text{ mol Al(OH)}_3$$

11. How many grams are in 0.02 moles of beryllium iodide?

$$\frac{0.02 \text{ mol BeI}_2}{1 \text{ mol BeI}_2} \Bigg| \frac{262.81 \text{ g BeI}_2}{1 \text{ mol BeI}_2} = 5.26 \text{ g BeI}_2$$

12. How many moles are in 68 grams of copper (II) hydroxide?

$$\frac{68 \text{ g Cu(OH)}_2}{97.52 \text{ g Cu(OH)}_2} \Bigg| \frac{1 \text{ mol Cu(OH)}_2}{97.52 \text{ g Cu(OH)}_2} = 0.697 \text{ mol Cu(OH)}_2$$

13. How many grams are in 3.3 moles of potassium sulfide?

$$\frac{3.3 \text{ mol K}_2\text{S}}{1 \text{ mol K}_2\text{S}} \Bigg| \frac{110.24 \text{ g K}_2\text{S}}{1 \text{ mol K}_2\text{S}} = 363.79 \text{ g K}_2\text{S}$$

14. How many moles are in  $1.2 \times 10^3$  grams of ammonia?

$$\frac{1.2 \times 10^3 \text{ g NH}_3}{17.00 \text{ g NH}_3} \Bigg| \frac{1 \text{ mol NH}_3}{17.00 \text{ g NH}_3} = 70.59 \text{ mol NH}_3$$

15. How many grams are in  $2.3 \times 10^{-4}$  moles of calcium phosphate?

$$\frac{2.3 \times 10^{-4} \text{ mol Ca}_3(\text{PO}_4)_2}{1 \text{ mol Ca}_3(\text{PO}_4)_2} \Bigg| \frac{310.07 \text{ g Ca}_3(\text{PO}_4)_2}{1 \text{ mol Ca}_3(\text{PO}_4)_2} = 0.071 \text{ g Ca}_3(\text{PO}_4)_2$$

16. How many moles are in  $3.4 \times 10^{-7}$  grams of silicon dioxide?

$$\frac{3.4 \times 10^{-7} \text{ g SiO}_2}{60.06 \text{ g SiO}_2} \Bigg| \frac{1 \text{ mol SiO}_2}{60.06 \text{ g SiO}_2} = 5.66 \times 10^{-9} \text{ mol SiO}_2$$

17. How many grams are in 1.11 moles of manganese (II) sulfate?

$$\frac{1.11 \text{ mol MnSO}_4}{1 \text{ mol MnSO}_4} \Bigg| \frac{150.95 \text{ g MnSO}_4}{1 \text{ mol MnSO}_4} = 167.55 \text{ g MnSO}_4$$