

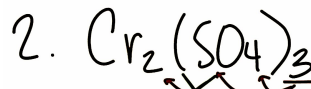


$\text{Al}: 2 \cdot 26.98\text{g}$

$\text{S}: 3 \cdot 32.07\text{g}$

$\text{Al}_2\text{S}_3: 150.17\text{g/mol}$

$$\begin{array}{r|l}
 41.40\text{g} & 1\text{ mol} \\
 \hline
 & 150.17\text{g} \\
 \hline
 & = 0.28\text{ mol Al}_2\text{S}_3
 \end{array}$$

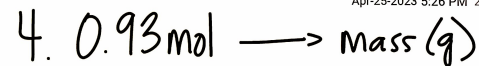


$\text{Cr}: 2 \cdot 52.00\text{g}$

$\text{S}: (1 \cdot 3) \cdot 32.07\text{g}$

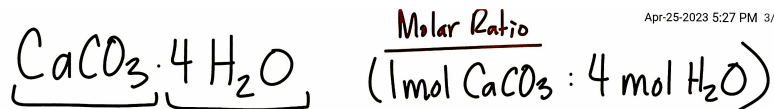
$\text{O}: (4 \cdot 3) \cdot 16.00\text{g}$

$\text{Cr}_2(\text{SO}_4)_3: 392.21\text{g/mol}$



$$\begin{array}{r|l}
 0.93\text{ mol} & 392.21\text{g} \\
 \hline
 & 1\text{ mol}
 \end{array}$$

$= 364.76\text{g Cr}_2(\text{SO}_4)_3$

Not on
Flisign

$\text{Ca}: 1 \cdot 40.08\text{g} \quad \text{H}: 2 \cdot 1.01\text{g}$

$\text{C}: 1 \cdot 12.01\text{g} \quad \text{O}: 1 \cdot 16.00\text{g}$

$\text{O}: 3 \cdot 16.00\text{g}$

$\text{CaCO}_3 = 100.09\text{g} \quad \text{H}_2\text{O}: 18.02\text{g}$

$\text{CaCO}_3 \cdot 4\text{H}_2\text{O} = 100.09\text{g} + 4(18.02\text{g}) = 172.17\text{g/mol}$

$$\begin{array}{l}
 3.50\text{ mol} \quad 1.50\text{ L soln} \\
 (\text{mol solute}) \quad V_{\text{soln}} \\
 \text{Molarity} = \frac{\text{mol}}{\text{L}}
 \end{array}$$

$\text{Molarity} = \frac{\text{mol}}{V_{\text{soln}}} = \frac{3.50\text{ mol}}{1.50\text{ L}}$

$\text{Molarity} = \frac{2.33\text{ mol/L}}{(2.33\text{ M, "Molar"})}$

7. $2.50\text{ M (mol/L)} \quad V = 3.40\text{ L}$
 $\text{mol solute} = \text{mol}$

$\text{mol solute} = \text{Molarity} \cdot V_{\text{soln}}$
 $= 2.50\text{ mol/L} \cdot 3.40\text{ L}$

$\text{mol solute} = 8.50\text{ mol}$

6. $193.4 \text{ g Ti}_3\text{P}_4 \rightarrow$

$$\frac{193.4 \text{ g}}{267.49 \text{ g/mol}} = 0.072 \text{ mol Ti}_3\text{P}_4$$

MM $\text{Ti}_3\text{P}_4 = 267.49 \text{ g/mol}$

$V_{\text{soln}} = 3400 \text{ mL} \rightarrow \text{L}$

$$\frac{3400 \text{ mL}}{1000 \text{ mL/L}} = 3.40 \text{ L (V}_{\text{soln}})$$

Molarity? (mol/L)

$$\text{Molarity} = \frac{\text{mol}}{\text{V}_{\text{soln}}} = \frac{0.072 \text{ mol}}{3.40 \text{ L}} = 0.021 \text{ mol/L (0.021M)}$$

9. $M_1 = 4.30 \text{ mol/L}$ $V_1 = 3.10 \text{ L}$] start
 $M_2 = \text{--- mol/L}$ $V_2 = 0.820 \text{ L}$] changed

$$M_2 = \frac{M_1 V_1}{V_2} = \frac{4.30 \text{ mol/L} \cdot 3.10 \text{ L}}{0.820 \text{ L}}$$

(mol/L)

$$M_2 = 16.26 \text{ mol/L}$$

10. $M_1 = 3.40 \text{ mol/L}$ $V_1 = 3.10 \text{ L}$] start
 $M_2 = 1.30 \text{ mol/L}$ $V_2 = \text{--- L}$] changed

$$V_2 = \frac{M_1 V_1}{M_2} = \frac{3.40 \text{ mol/L} \cdot 3.10 \text{ L}}{1.30 \text{ mol/L}}$$

(L)

$$V_2 = 8.11 \text{ L}$$