



$$= 3.7514 \frac{1}{26.9815} = 0.13904$$

$$= 0.13904 \frac{6.02214 \cdot 10^{23}}{\quad} = 8.3729 \cdot 10^{22}$$

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***Molecular Mass = sum of the masses of the individual atoms***

$$1 \text{ atom C} \left( \frac{12.011 \text{ amu C}}{\text{atom C}} \right) + 4 \text{ atoms H} \left( \frac{1.008 \text{ amu H}}{\text{atom C}} \right) = 16.043 \text{ amu CH}_4$$

$$2 \text{ atom Al} \left( \frac{26.98 \text{ amu Al}}{\text{atom Al}} \right) + 3 \text{ atoms O} \left( \frac{16.00 \text{ amu O}}{\text{atom O}} \right) = 101.96 \text{ amu Al}_2\text{O}_3$$

$$1 \text{ atom Fe} \left( \frac{55.85 \text{ amu Al}}{\text{atom Al}} \right) + 1 \text{ atom S} \left( \frac{32.07 \text{ amu S}}{\text{atom S}} \right) + 4 \text{ atom O} \left( \frac{16.00 \text{ amu O}}{\text{atom O}} \right) = 151.92 \text{ amu FeSO}_4$$



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$$n_{\text{FeSO}_4} = 28.115 \text{ g FeSO}_4 \frac{\text{mol FeSO}_4}{151.91 \text{ g FeSO}_4} = 0.18508 \text{ mol FeSO}_4$$

$$N_{\text{Fe}} = 0.18508 \text{ mol FeSO}_4 \frac{1 \text{ mol Fe}}{1 \text{ mol FeSO}_4} \frac{6.0221 \cdot 10^{23} \text{ molecule}}{\text{mol}} = 1.1146 \cdot 10^{23} \text{ molecule Fe}$$

$$N_{\text{S}} = 0.18508 \text{ mol FeSO}_4 \frac{1 \text{ mol S}}{1 \text{ mol FeSO}_4} \frac{6.0221 \cdot 10^{23} \text{ molecule}}{\text{mol}} = 1.1146 \cdot 10^{23} \text{ molecule S}$$

$$N_{\text{O}_2} = 0.18508 \text{ mol FeSO}_4 \frac{4 \text{ mol O}}{1 \text{ mol FeSO}_4} \frac{1 \text{ mol O}_2}{2 \text{ mol O}} \frac{6.0221 \cdot 10^{23} \text{ molecule}}{\text{mol}} = 2.2291 \cdot 10^{23} \text{ molecule O}_2$$

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$$n_{\text{FeSO}_4} = 28.115 \text{ g FeSO}_4 \frac{\text{mol FeSO}_4}{151.91 \text{ g FeSO}_4} = 0.18508 \text{ mol FeSO}_4$$

$$m_{\text{Fe}} = 0.18508 \text{ mol FeSO}_4 \frac{1 \text{ mol Fe}}{1 \text{ mol FeSO}_4} \frac{55.85 \text{ g Fe}}{\text{mol Fe}} = 10.336 \text{ g Fe}$$

$$m_{\text{S}} = 0.18508 \text{ mol FeSO}_4 \frac{1 \text{ mol S}}{1 \text{ mol FeSO}_4} \frac{32.066 \text{ g}}{\text{mol S}} = 5.9348$$

$$\frac{4}{4}$$

Na

$$m_c = 47.29 \text{ mg compound} \frac{37.0 \text{ g C}}{100.00 \text{ g compound}} = 17.5 \text{ mg C}$$

$$m_H = 47.29 \text{ mg compound} \frac{2.21 \text{ g H}}{100.00 \text{ g compound}} = 1.05 \text{ mg H}$$

$$m_o = 47.29 \text{ mg compound} \frac{42.4 \text{ g O}}{100.00 \text{ g compound}} = 20.1 \text{ mg O}$$

$$m_N = 47.29 \text{ mg compound} \frac{18.4 \text{ g N}}{100.00 \text{ g compound}} = 8.70 \text{ mg N}$$

$$17.5 \text{ mg C} + 1.04 \text{ mg H} + 20.0 \text{ mg O} + 8.70 \text{ mg N} = 47.3 \text{ mg compound}$$