



$$\begin{array}{r} \text{K} \rightarrow 39.1\text{g} \\ 2 \times \text{C} \rightarrow 24.0\text{g} \\ 3 \times \text{H} \rightarrow 3.0\text{g} \\ 2 \times \text{O} \rightarrow 32.0\text{g} \\ \hline 98.1\text{g} \end{array}$$



$$\begin{array}{r} 2 \times \text{N} \rightarrow 28.0\text{g} \\ 4 \times \text{O} \rightarrow 64.0\text{g} \\ \hline 92.0\text{g} \end{array}$$

Part B

1)  $3.45\text{g Cl}_2 \times \frac{1\text{mol}}{71.0\text{g}} = 0.0486\text{mol}$

2)  $4.12\text{g Si} \times \frac{1\text{mol}}{28.1\text{g}} = 0.147\text{mol}$

3)  $.0132\text{g K} \times \frac{1\text{mol}}{39.1\text{g}} = 3.38 \times 10^{-4}\text{mol}$

4)  $4.21\text{mol Fe} \times \frac{55.8\text{g}}{1\text{mol}} = 235\text{g}$

5)  $2.13\text{mol Al} \times \frac{27.0\text{g}}{1\text{mol}} = 57.5\text{g}$

6)  $1.21\text{mol Sn} \times \frac{118.7\text{g}}{1\text{mol}} = 144\text{g}$

7)  $1.45\text{mol O}_2 \times \frac{22.4\text{L}}{1\text{mol}} = 32.4\text{L}$

8)  $4.98\text{mol H}_2 \times \frac{22.4\text{L}}{1\text{mol}} = 112\text{L}$

9)  $57.11 \times 1\text{mol} = 57.11$

$$\frac{\quad}{22.4L} = 2.5L \text{ mol}$$

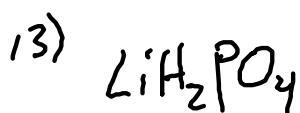
$$10) 13.2L \times \frac{1\text{mol}}{22.4L} = 0.589 \text{ mol}$$

$$11) M = \frac{n}{V} \quad 4.00M = \frac{n}{0.413L}$$

$$n = 1.65 \text{ mol}$$

$$12) 0.2M = \frac{n}{0.210L}$$

$$n = 0.04 \text{ mol}$$



Li	6.9g
2x H	2.0g
1x P	31.0g
4x O	64.0g
	<hr/> 103.9g

$$a) 7.64g \times \frac{1\text{mol}}{103.9g} = 0.0735 \text{ mol}$$

$$b) 0.0735 \text{ mol} \times \frac{6.022 \times 10^{23} \text{ particles}}{1\text{mol}} = 4.43 \times 10^{22}$$

$$c) M = \frac{n}{V}$$

$$M = \frac{0.0735 \text{ mol}}{1.3L}$$

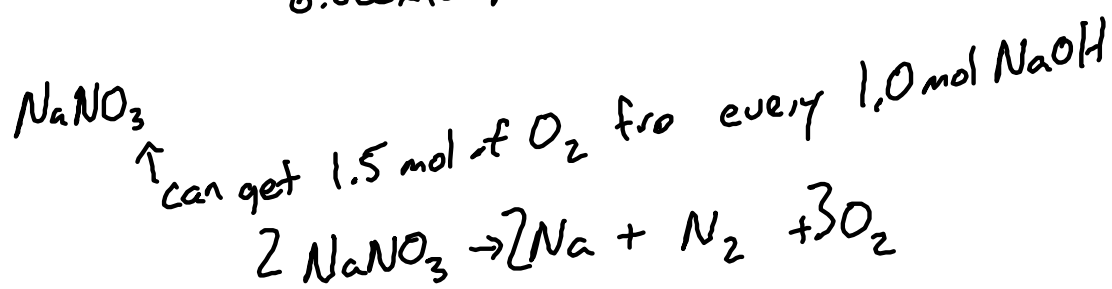
$$M = 0.056 \text{ M}$$

$$14) 31.23L \times \frac{1\text{mol}}{22.4L} \times 0.721 = 1.005215 \text{ mol}$$

$$M = \frac{n}{V} \Rightarrow M = \frac{1.005215 \text{ mol}}{1.932 \text{ L}}$$

$$M = 0.520 \text{ M}$$

$$15) 2.145 \times 10^{24} \text{ molecules} \times \frac{1 \text{ mol}}{6.022 \times 10^{23} \text{ molecules}} = 3.561939 \text{ mol}$$



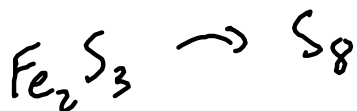
$$3.56193 \text{ mol} \times \frac{1.5 \text{ mol O}_2}{1 \text{ mol NaNO}_3} \times \frac{22.4 \text{ L}}{1 \text{ mol}} = 120. \text{ L}$$

$$16) 1210. \text{ kg} \times \frac{1 \text{ mol}}{40.0 \text{ g}} = 30.25 \text{ mol}$$

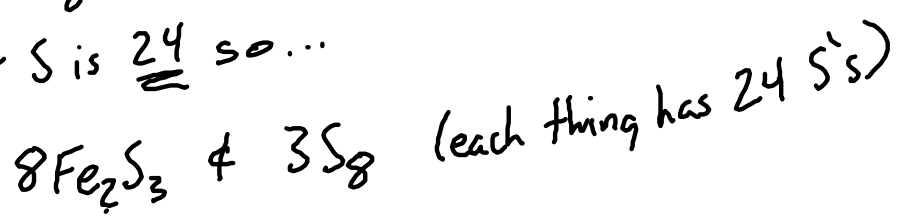
$$M = \frac{30.25 \text{ mol}}{0.212 \text{ L}}$$

$$= 143 \text{ M}$$

$$17) \text{Fe}_2\text{S}_3 = 207.9 \frac{\text{g}}{\text{mol}}$$



LCM for S is 24 so...



so ratio is  $\frac{3\text{S}_8}{8\text{Fe}_2\text{S}_3}$

$$6.1\text{g} \times \frac{1\text{mol}}{207.9\text{g}} \times \frac{3\text{mol S}_8}{8\text{mol Fe}_2\text{S}_3} \times \frac{6.022 \times 10^{23} \text{ molecules}}{1\text{mol}} = 6.6 \times 10^{21} \text{ molecules S}_8$$