More Conversions Examples

1a). $25.0 \text{ g O}_2 \ \times \ \dfrac{1 \text{ mol O}_2}{32.00 \text{ g O}_2} \ = \ 0.781 \text{ mol O}_2$

2a). $1.25 \text{ mol H}_2\text{O} \ \times \ \dfrac{18.02 \text{ g H}_2\text{O}}{1 \text{ mol H}_2\text{O}} \ = \ 22.5 \text{ g H}_2\text{O}$

3a). $2.50 \text{ mol UF}_6 \ \times \ \dfrac{6.022 \times 10^{23} \text{ molec UF}_6}{1 \text{ mol UF}_6} \ = \ 1.51 \times 10^{24} \text{ molec UF}_6$

4a). $2.50 \text{ mol UF}_6 \ \times \ \dfrac{6.022 \times 10^{23} \text{ molec UF}_6}{1 \text{ mol UF}_6} \ \times \ \dfrac{7 \text{ atoms}^*}{1 \text{ molec UF}_6} \ = \ 1.05 \times 10^{25} \text{ atoms}$

* The unit extension is dropped on atoms because there are more than one type of atom to be considered (one U atom plus six F atoms make for 7 atoms*)

5a). $3.56 \text{ g Li}_2\text{O} \ \times \ \dfrac{1 \text{ mol Li}_2\text{O}}{29.88 \text{ g Li}_2\text{O}} \ \times \ \dfrac{6.022 \times 10^{23} \text{ molec Li}_2\text{O}}{1 \text{ mol Li}_2\text{O}} \ = \ 7.17 \times 10^{22} \text{ molec Li}_2\text{O}$

6a). $3.50 \times 10^{22} \text{ molec KNO}_3 \ \times \ \dfrac{1 \text{ mol KNO}_3}{6.022 \times 10^{23} \text{ molec KNO}_3} \ \times \ \dfrac{101.11 \text{ g KNO}_3}{1 \text{ mol KNO}_3} \ = \ 5.88 \text{ g KNO}_3$