Date:

Predict the products and balance each equation:

Single

a. $2\,Ag^{+} + 1\,ZnBr_2^{2-} \rightarrow Zn + 2AgBr$

Synthesis

b. $3\,Ca^{+2} + N_2^{-3} \rightarrow Ca_3N_2$

Double

c. $Ca(OH)_2^{+2\,-1} + AlCl_3^{+3\,-1} \rightarrow Al^{+3}OH^{-} + Ca^{+2}Cl^{-1}$

$\rightarrow Al(OH)_3 + CaCl_2$

Date:

How many moles are in a balloon that contains 220 g of carbon dioxide?

CO_2

$220\,g\,CO_2 \times \frac{1\,mol\,CO_2}{44\,g\,CO_2} = 5\,mol\,CO_2$

(44 g CO2 ← molar mass)

C: $1 \times 12 = 12$

O: $2 \times 16 = 32$

44

Date:

$Na^{+}PO_4^{3-}$

Change 0. 025 moles of Sodium Phosphate to grams.

Na_3PO_4 ← molar mass

$0.025\,mol\,Na_3PO_4 \times \frac{164\,g\,Na_3PO_4}{1\,mol\,Na_3PO_4} = 4.1\,g\,Na_3PO_4$

Na: $3 \times 23 = 69$

P: $1 \times 31 = 31$

O: $4 \times 16 = 64$

164

Convert 16.5 g of Lithium Oxide to moles.

$Li^{+}O^{2-}$

Li_2O

$\frac{16.5\,g\,Li_2O}{1} \times \frac{1\,mol\,Li_2O}{30\,g\,Li_2O} = 0.55\,mol\,Li_2O$

(30 g Li2O ← molar mass)

Li: $2 \times 7 = 14$

O: $1 \times 16 = 16$

30

Date:

$Mg^{+2}Br^{-1}$

What is the percent composition of magnesium bromide?

$MgBr_2$

Mg: $1 \times 24.31 = 24.31$

Br: $2 \times 79.90 = 159.8$

184.11

Mg: $\frac{24.31}{184.11} \times 100 = 13.2\%$

Br: $\frac{159.8}{184.11} \times 100 = 86.8\%$

100%

check work