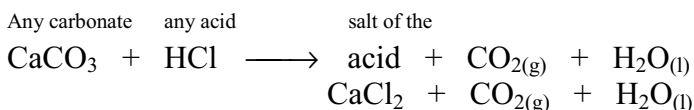
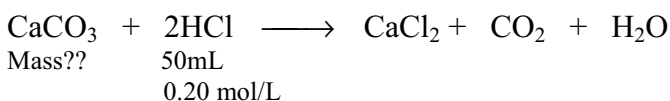


## Solutions Stoichiometry



Binary acid salt will always have an ending in an -ide

- H<sub>2</sub>S → sulphide
- HCl → chloride
- HBr → bromide

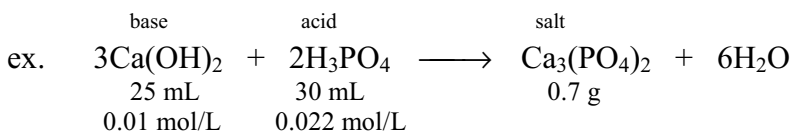


$$\begin{aligned} n &= cv \\ &= (0.2)(0.05) \\ &= 0.001 \text{ mol} \end{aligned}$$

$$\begin{aligned} \therefore \text{mass} &= \text{moles} \cdot M_R \\ &= (0.0005)(100) \\ &= 0.050 \text{ g} \end{aligned}$$

$$\begin{aligned} \text{CaCO}_3 : \text{HCl} \\ 1 : 2 \\ x : 0.001 \\ x = 0.0005 \end{aligned}$$

$$\begin{aligned} M_R \text{ CaCO}_3 &= (40.08) + (12.01) + 3(16.00) \\ &= 100 \text{ g/mol} \end{aligned}$$



$$\begin{array}{cc} n = cv & n = cv \\ = (0.01)(0.025) & = (0.03)(0.022) \\ = \frac{0.00025}{3} & = \frac{0.00066}{2} \\ = 0.0000833 & = 0.0003 \end{array}$$

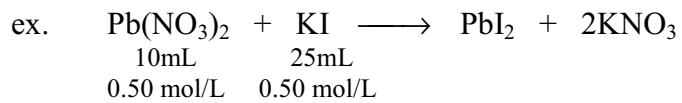
Which one is the limiting reagent?

Determine the mass of the Calcium phosphate that will be formed when 0.75 g of phosphate was formed, determine the percentage yield, and determine the percentage error

$$\begin{aligned} \text{Cu}(\text{OH})_2 : \text{Cu}_3(\text{PO}_4)_2 \\ 3 : 1 \\ x = 8.33 \times 10^{-5} \end{aligned}$$

$$\begin{aligned} M_R &= 3(63.55) + 2(30.97) + 8(16) \\ &= 310 \end{aligned}$$

$$\begin{aligned} \text{mass} &= \text{mass} \cdot M_R \\ &= (8.33 \times 10^{-5})(310) \\ &= 0.025823 \\ &= 2.58 \times 10^{-3} \text{ g} \end{aligned}$$



All group 1 compounds, all nitrates, all ammonium compounds, all acetates and all perchlorates are soluble (they can all dissolve)

Limiting reagent

Mass of Lead(II) Iodide theoretically obtained

1.82 g of Lead(II) Iodide was actually obtained

Determine the percentage yield

Determine the percentage error