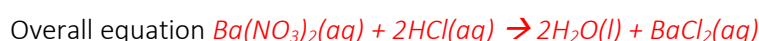


Friday quiz 2 - overall equations and ionic equations.

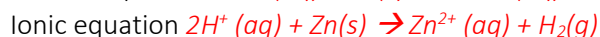
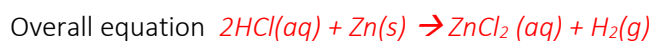
- 1) Write the balanced overall and ionic equations of the following. Give states.
- a. Hydrochloric acid (HCl) solution reacts with calcium carbonate powder to produce a calcium chloride aqueous solution, carbon dioxide gas and liquid water.



- b. An aqueous solution of barium nitrate ($\text{Ba}(\text{OH})_2$) is placed in an aqueous solution of hydrochloric acid (HCl) to produce an aqueous solution of barium chloride and liquid water.



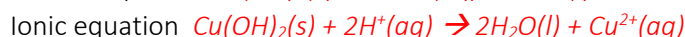
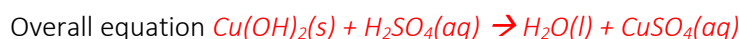
- c. An aqueous solution of hydrochloric acid (HCl) reacts with a solid piece of zinc metal to produce hydrogen gas and an aqueous solution of zinc chloride.



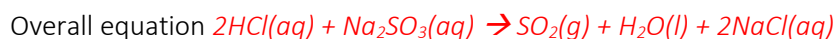
- d. Sodium oxide (Na_2O) solution is mixed with an aqueous solution of nitric acid to produce liquid water and an aqueous solution of sodium nitrate.



- e. Copper(II) hydroxide powder is added to an aqueous solution of sulphuric acid (H_2SO_4) to produce water and aqueous solution of copper(II) sulphate.



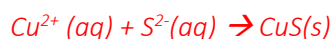
- f. Hydrochloric acid (HCl) solution is mixed with an aqueous solution of sodium sulphite (Na_2SO_3) to produce sulphur dioxide gas, liquid water and an aqueous solution of sodium chloride.



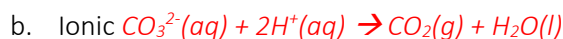
- g. Copper(II) sulphide powder is placed in aqueous solution of HCl to produce solid copper chloride and hydrogen sulphide gas (H_2S).



- 2) Write the balanced ionic equation for the reaction that occurs when the two aqueous solutions of CuSO_4 and K_2S are mixed to form a precipitate.



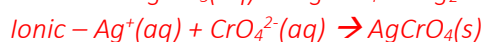
- 3) Write the balanced overall and ionic equation for the reaction between aqueous solutions of K_2CO_3 and HNO_3 . Include states.



- 4) Write the balanced overall and ionic equations for the reaction between aqueous solutions of AgNO_3 and MgCrO_4 to form an insoluble, coloured, substance. Include states.

Although the charge of CrO_4^{2-} is not given students should be able to obtain this using the formula of MgCrO_4 and the charge on the Mg ion given in the table below.

Knowledge of how to write ionic formulae was required



Valency of Some Simple and Polyatomic Ions

Valency	Simple (+ve) ions	Simple (-ve) ions	Polyatomic ions
1	Copper(I), Cu^+ Hydrogen, H^+ Potassium, K^+ Silver, Ag^+ Sodium, Na^+	Hydride, H^- Chloride, Cl^- Bromide, Br^- Iodide, I^-	Ammonium, NH_4^+ Hydrogencarbonate, HCO_3^- Hydroxide, OH^- Nitrate, NO_3^-
2	Calcium, Ca^{2+} Copper(II), Cu^{2+} Iron(II), Fe^{2+} Lead(II), Pb^{2+} Magnesium, Mg^{2+} Zinc, Zn^{2+}	Oxide, O^{2-} Sulfide, S^{2-}	Carbonate, CO_3^{2-} Sulfate, SO_4^{2-}
3	Aluminium, Al^{3+} Iron(III), Fe^{3+}	Nitride, N^{3-}	Phosphate, PO_4^{3-}