

## Chem11 Balancing Word Eq. 3 : W.S. - 130

Write down the chemical equation and balance.

1) Milk of Magnesia (magnesium hydroxide) is neutralized by hydrochloric acid to produce water and aqueous magnesium chloride.

2) Sodium reacts with water to produce hydrogen gas and sodium hydroxide.

3) Aluminum reacts with sulfuric acid ( $\text{H}_2\text{SO}_4$ ). The products are hydrogen gas and aluminum sulfate.

4) Silver nitrate and calcium chloride will react to form silver chloride and calcium nitrate in solution.

5) A copper(II)chloride solution will react with a sodium sulfide solution to form the precipitate copper(II)sulfide, and a solution of sodium chloride.

6) Solid ammonium chloride is formed when ammonia gas ( $\text{NH}_3$ ) and hydrogen chloride gas are mixed.

7) When hydrochloric acid is added to limestone, ( $\text{CaCO}_3$ ), the products are ; aqueous calcium chloride, carbon dioxide and water.

8) Sodium iodide and chlorine gas in solution, react to form aqueous sodium chloride and aqueous iodine.

9) Pentane ( $C_5H_{12}$ ) is a component of gasoline. It combines with oxygen (burns) to produce water and carbon dioxide. Energy is released.

10) When copper(II)nitrate trihydrate ( $Cu(NO_3)_2 \cdot 3H_2O$ ), is heated, the products are ; copper(II)oxide, water vapor, oxygen gas, and nitrogen dioxide gas.

Answers : 1)  $Mg(OH)_2 + 2HCl \rightarrow 2H_2O + MgCl_2$ , 2)  $2Na + 2H_2O \rightarrow H_2 + 2NaOH$ , 3)  $2Al + 3H_2SO_4 \rightarrow 3H_2 + Al_2(SO_4)_3$ , 4)  $2AgNO_3 + CaCl_2 \rightarrow 2AgCl + Ca(NO_3)_2$ , 5)  $CuCl_2 + Na_2S \rightarrow CuS + 2NaCl$ , 6)  $NH_3 + HCl \rightarrow NH_4Cl$ , 7)  $CaCO_3 + 2HCl \rightarrow CaCl_2 + CO_2 + H_2O$ , 8)  $2NaI + Cl_2 \rightarrow 2NaCl + I_2$ , 9)  $C_5H_{12} + 8O_2 \rightarrow 5CO_2 + 6H_2O$ , 10)  $2Cu(NO_3)_2 \cdot 3H_2O \rightarrow 2CuO + 6H_2O + O_2 + 4NO_2$ .