

Topic 2 Exercise 5 – formulae, equations and ionic equations

A: Deduce the formulae of the following compounds:

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| 1. Sodium chloride | 2. Aluminium chloride |
| 3. Ammonium sulphate | 4. Magnesium nitrate |
| 5. Magnesium oxide | 6. Copper (II) hydroxide |
| 7. Aluminium oxide | 8. Sodium carbonate |
| 9. Copper (I) oxide | 10. Copper (II) oxide |
| 11. Aluminium sulphate | 12. Lead (II) sulphide |
| 13. Lead (IV) oxide | 14. Calcium nitride |

B: Write out the full stoichiometric and ionic equations for the following reactions:

1. When aqueous magnesium chloride is added to aqueous silver nitrate, a white precipitate is formed.
2. When aqueous sodium hydroxide is added to aqueous aluminium sulphate, a white precipitate is formed.
3. When aqueous barium chloride is treated with dilute sodium sulphate, a white precipitate is formed.
4. Dilute sulphuric acid is neutralised by sodium hydroxide solution.
5. A pale blue precipitate is formed on slow addition of potassium hydroxide solution to copper (II) sulphate solution.
6. A white precipitate is formed when dilute hydrochloric acid is added to a solution of lead (II) nitrate.
7. When dilute calcium chloride is mixed with sulphuric acid, a white precipitate is formed.
8. Calcium carbonate dissolves in dilute hydrochloric acid with the evolution of a colourless gas.
9. When dilute sulphuric acid is added to sodium carbonate solution, a gas is given off.
10. When aqueous calcium chloride is mixed with aqueous sodium carbonate, a white precipitate is formed.
11. Ammonia gas dissolves in dilute nitric acid.