

11.2 page 356. Types of chemical reactions.

1. Study the five main types of chemical reactions pages 366 & 367.

2. Single replacement: activity series of metals, page 361.

3. Evidence that a double replacement reaction occurs: page 362.

4. Questions 16 & 17 page 363

Balance and classify each reaction as combination or synthesis, decomposition, single replacement, double replacement or combustion.

1. $\text{PbCl}_2 + \text{AgNO}_3 \rightarrow \text{Pb}(\text{NO}_3)_2 + \text{AgCl}$ _____
2. $\text{NH}_3 + \text{HCl} \rightarrow \text{NH}_4\text{Cl}$ _____
3. $\text{AlCl}_3 + \text{Na}_2\text{SO}_4 \rightarrow \text{Al}_2(\text{SO}_4)_3 + \text{NaCl}$ _____
4. $\text{Zn} + \text{S} \rightarrow \text{ZnS}$ _____
5. $\text{Al}_2(\text{SO}_4)_3 + \text{BaCl}_2 \rightarrow \text{BaSO}_4 + \text{AlCl}_3$ _____
6. $\text{Al}_2\text{S}_3 \rightarrow \text{Al} + \text{S}$ _____
7. $\text{H}_2\text{SO}_4 + \text{Fe} \rightarrow \text{H}_2 + \text{FeSO}_4$ _____
8. $\text{C}_{12}\text{H}_{22}\text{O}_{11} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$ _____
9. $\text{Mg}(\text{OH})_2 + \text{H}_2\text{SO}_4 \rightarrow \text{MgSO}_4 + \text{H}_2\text{O}$ _____
10. $\text{NaOH} + \text{CuSO}_4 \rightarrow \text{Na}_2\text{SO}_4 + \text{Cu}(\text{OH})_2$ _____
11. $\text{C}_4\text{H}_{12} + \text{O}_2 \rightarrow \text{H}_2\text{O} + \text{CO}_2$ _____
12. $\text{Fe} + \text{O}_2 \rightarrow \text{Fe}_2\text{O}_3$ _____
13. $\text{Mg}_3(\text{PO}_4)_2 + \text{H}_2 \rightarrow \text{Mg} + \text{H}_3\text{PO}_4$ _____
14. $\text{NH}_4\text{NO}_3 \rightarrow \text{N}_2\text{O} + \text{H}_2\text{O}$ _____
15. $\text{Cl}_2 + \text{KBr} \rightarrow \text{KCl} + \text{Br}_2$ _____

Questions p 363

1. Write the products of these double-replacement reactions. Then balance each equation.

- $\text{NaOH}(\text{aq}) + \text{Fe}(\text{NO}_3)_3(\text{aq}) \rightarrow$ (Iron (III) hydroxide is a precipitate).
- $\text{Ba}(\text{NO}_3)_2(\text{aq}) + \text{H}_3\text{PO}_4(\text{aq}) \rightarrow$ (barium phosphate is a precipitate)
- $\text{FeS}(\text{s}) + \text{HCl}(\text{aq}) \rightarrow$ (Hydrogen sulfide gas (H_2S) is formed.)

2. Write the balanced equation of each reaction:

- $\text{KOH}(\text{aq}) + \text{H}_3\text{PO}_4(\text{aq}) \rightarrow$ (Water is formed)
- $\text{AgNO}_3(\text{aq}) + \text{NaCl}(\text{s}) \rightarrow$ (silver chloride is a precipitate)
- $\text{Ca}(\text{OH})_2(\text{aq}) + \text{H}_3\text{PO}_4(\text{aq}) \rightarrow$ (water is formed)
- $\text{KI}(\text{aq}) + \text{Pb}(\text{NO}_3)_2(\text{aq}) \rightarrow$ (Lead (II) iodide is a precipitate)
- $\text{H}_2\text{SO}_4(\text{aq}) + \text{Al}(\text{OH})_3(\text{aq}) \rightarrow$ (water is formed).