

Types of Reactions

Directions: Identify the following reactions using the following: C = combustion S = synthesis
D = decomposition SR = single replacement DR = double replacement
+ write equation + Balance

- mercury + oxygen \rightarrow mercury (II) oxide S
 $2\text{Hg} + \text{O}_2 \rightarrow 2\text{HgO}$
- zinc + hydrogen sulfate \rightarrow zinc sulfate + hydrogen SR
 $\text{Zn} + \text{H}_2\text{SO}_4 \rightarrow \text{ZnSO}_4 + \text{H}_2$
- water \rightarrow hydrogen + oxygen (electrolysis) D
 $2\text{H}_2\text{O} \xrightarrow{\text{Ele}} 2\text{H}_2 + \text{O}_2$
- calcium oxide + water \rightarrow calcium hydroxide S
 $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$
- sodium chloride + hydrogen sulfate \rightarrow sodium hydrogen sulfate + hydrogen chloride DR
 $\text{NaCl} + \text{H}_2\text{SO}_4 \rightarrow \text{NaHSO}_4 + \text{HCl}$
- sodium + iodine \rightarrow Sodium Iodide S
 $2\text{Na} + \text{I}_2 \rightarrow 2\text{NaI}$
- propane (C_3H_8) + oxygen \rightarrow Carbon dioxide and water C
 $\text{C}_3\text{H}_8 + 5\text{O}_2 \rightarrow 3\text{CO}_2 + 4\text{H}_2\text{O}$
- aluminum + hydrogen sulfate \rightarrow Aluminum Sulfate + Hydrogen gas SR
 $2\text{Al} + 3\text{H}_2\text{SO}_4 \rightarrow \text{Al}_2(\text{SO}_4)_3 + 3\text{H}_2$
- iron (III) sulfate + ammonium sulfide \rightarrow Iron III sulfide + Ammonium sulfate DR
 $\text{Fe}_2(\text{SO}_4)_3 + 3(\text{NH}_4)_2\text{S} \rightarrow \text{Fe}_2\text{S}_3 + 3(\text{NH}_4)_2\text{SO}_4$
- nickel (II) chlorate \rightarrow (heating) Nickel II chloride + Oxygen D
 $2\text{Ni}(\text{ClO}_3)_2 \xrightarrow{\Delta} 2\text{NiCl}_2 + 3\text{O}_2$
- copper (II) hydroxide + acetic acid ($\text{HC}_2\text{H}_3\text{O}_2$) \rightarrow Copper II Acetate + water DR
 $\text{Cu(OH)}_2 + 2\text{HC}_2\text{H}_3\text{O}_2 \rightarrow \text{Cu}(\text{C}_2\text{H}_3\text{O}_2)_2 + 2\text{H}_2\text{O}$
- potassium iodide + chlorine \rightarrow Potassium Chloride + Iodine SR
 $2\text{KI} + \text{Cl}_2 \rightarrow 2\text{KCl} + \text{I}_2$
- zinc hydroxide \rightarrow (heating) Zinc Oxide + water D
 $\text{Zn(OH)}_2 \xrightarrow{\Delta} \text{ZnO} + \text{H}_2\text{O}$
- zinc + lead (II) acetate \rightarrow Zinc Acetate + Lead SR
 $\text{Zn} + \text{Pb}(\text{C}_2\text{H}_3\text{O}_2)_2 \rightarrow \text{Zn}(\text{C}_2\text{H}_3\text{O}_2)_2 + \text{Pb}$
- hydrogen + oxygen \rightarrow water S
 $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
- silver nitrate + potassium chloride \rightarrow Silver Chloride + Potassium Nitrate DR
 $\text{AgNO}_3 + \text{KCl} \rightarrow \text{AgCl} + \text{KNO}_3$
- zinc + hydrogen chloride (HCl) \rightarrow Zinc Chloride + Hydrogen gas SR
 $\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$
- barium carbonate \rightarrow (heating) Barium Oxide + Carbon dioxide D
 $\text{BaCO}_3 \xrightarrow{\Delta} \text{BaO} + \text{CO}_2$
- butene (C_4H_8) + oxygen \rightarrow Carbon dioxide and water C
 $\text{C}_4\text{H}_8 + 6\text{O}_2 \rightarrow 4\text{CO}_2 + 4\text{H}_2\text{O}$
- hydrogen + nitrogen \rightarrow ammonia (NH_3) S
 $3\text{H}_2 + \text{N}_2 \rightarrow 2\text{NH}_3$