Chemical Reaction Types
pp. 276 - 284

1. Combustion

hydrocarbon + oxygen → carbon dioxide + water

$C_3H_8O + O_2 \rightarrow CO_2 + H_2O$

$CH_4 + O_2 \rightarrow CO_2 + H_2O$

$C_8H_{18} + O_2 \rightarrow CO_2 + H_2O$

Chemical Reaction Types
pp. 276 - 284

2. Synthesis

element + element → compound

compound + compound → compound

Chemical Reaction Types
pp. 276 - 284

2. Synthesis

element + element → compound

$H_2 + O_2 \rightarrow H_2O$

$Na + Cl_2 \rightarrow NaCl$

phosphorus + oxygen →

nitrogen + hydrogen →

Chemical Reaction Types
pp. 276 - 284

2. Synthesis

compound + compound → compound

$H_2O + CO_2 \rightarrow H_2CO_3$ (acid)

$MgO + SO_3 \rightarrow MgSO_4$

$H_2O + Al_2O_3 \rightarrow Al(OH)_3$ (base)

cesium oxide + carbon dioxide →

Chemical Reaction Types
pp. 276 - 284

3. Decomposition

compound → compound + compound

$H_2CO_3 \rightarrow H_2O + CO_2$

$MgSO_4 \rightarrow MgO + SO_3$

$Al(OH)_3 \rightarrow H_2O + Al_2O_3$

Chemical Reaction Types
pp. 276 - 284

3. Decomposition

compound → element + element

$MgCl_2 \rightarrow Mg + Cl_2$

$HgO \rightarrow Hg + O_2$

Chemical Reaction Types
pp. 276 - 284

4. Single Displacement

element + compound → element + compound

$Pb + MgCl_2 \rightarrow Mg + PbCl_2$

$Zn + H_3PO_4 \rightarrow H_2 + Zn_3(PO_4)_2$

$Br_2 + NaCl \rightarrow NaBr + Cl_2$

Chemical Reaction Types
pp. 276 - 284

5. Double Displacement

compound + compound → compound + compound

$Pb(NO_3)_2 + MgCl_2 \rightarrow Mg(NO_3)_2 + PbCl_2$

$NaOH + H_3PO_4 \rightarrow H_2O + Na_3PO_4$