

Classifying and Balancing Equations

11. Classify each reaction as a formation (F), decomposition (D), single replacement (SR), double replacement (DR), or combustion (C) reaction. Then balance each equation.

Reaction	Classification
$3 \text{Li}_{(s)} + \text{AlCl}_{3(aq)} \rightarrow \text{Al}_{(s)} + 3 \text{LiCl}_{(aq)}$	SR
$2 \text{NH}_{3(g)} \rightarrow \text{N}_{2(g)} + 3 \text{H}_{2(g)}$	D
$2 \text{K}_{(s)} + \text{Br}_{2(l)} \rightarrow 2 \text{KBr}_{(s)}$	F
$2 \text{C}_{10}\text{H}_{22(l)} + 31 \text{O}_{2(g)} \rightarrow 20 \text{CO}_{2(g)} + 22 \text{H}_2\text{O}_{(g)}$	C
$2 \text{NH}_4\text{OH}_{(aq)} + \text{H}_2\text{CO}_{3(aq)} \rightarrow 2 \text{H}_2\text{O}_{(l)} + (\text{NH}_4)_2\text{CO}_{3(aq)}$	DR
$2 \text{H}_2\text{O}_{(l)} \rightarrow 2 \text{H}_{2(g)} + \text{O}_{2(g)}$	D
$2 \text{Al}_{(s)} + 3 \text{Cl}_{2(g)} \rightarrow 2 \text{AlCl}_{3(s)}$	F
$2 \text{Zn}_{(s)} + \text{SnF}_{4(aq)} \rightarrow \text{Sn}_{(s)} + 2 \text{ZnF}_{2(aq)}$	SR