

# Balancing Chemical Equations

1.  $\_2\_ \text{Cu(s)} + \_1\_ \text{O}_2\text{(g)} \rightarrow \_2\_ \text{CuO(s)}$
2.  $\_2\_ \text{H}_2\text{O(l)} \rightarrow \_2\_ \text{H}_2\text{(g)} + \_1\_ \text{O}_2\text{(g)}$
3.  $\_3\_ \text{Fe(s)} + \_4\_ \text{H}_2\text{O(g)} \rightarrow \_4\_ \text{H}_2\text{(g)} + \_1\_ \text{Fe}_3\text{O}_4\text{(s)}$
4.  $\_2\_ \text{AsCl}_3\text{(aq)} + \_3\_ \text{H}_2\text{S(aq)} \rightarrow \_1\_ \text{As}_2\text{S}_3\text{(s)} + \_6\_ \text{HCl(aq)}$
5.  $\_1\_ \text{CuSO}_4 \cdot 5\text{H}_2\text{O(s)} \rightarrow \_1\_ \text{CuSO}_4\text{(s)} + \_5\_ \text{H}_2\text{O(g)}$
6.  $\_1\_ \text{Fe}_2\text{O}_3\text{(s)} + \_3\_ \text{H}_2\text{(g)} \rightarrow \_2\_ \text{Fe(s)} + \_3\_ \text{H}_2\text{O(l)}$
7.  $\_1\_ \text{CaCO}_3\text{(s)} \rightarrow \_1\_ \text{CaO(s)} + \_1\_ \text{CO}_2\text{(g)}$
8.  $\_8\_ \text{Fe(s)} + \_1\_ \text{S}_8\text{(s)} \rightarrow \_8\_ \text{FeS(s)}$
9.  $\_1\_ \text{H}_2\text{S(aq)} + \_2\_ \text{KOH(aq)} \rightarrow \_2\_ \text{HOH(l)} + \_1\_ \text{K}_2\text{S(aq)}$
10.  $\_2\_ \text{NaCl(l)} \rightarrow \_2\_ \text{Na(l)} + \_1\_ \text{Cl}_2\text{(g)}$
11.  $\_2\_ \text{Al(s)} + \_3\_ \text{H}_2\text{SO}_4\text{(aq)} \rightarrow \_3\_ \text{H}_2\text{(g)} + \_1\_ \text{Al}_2\text{(SO}_4\text{)}_3$
12.  $\_1\_ \text{H}_3\text{PO}_4\text{(aq)} + \_3\_ \text{NH}_4\text{OH(aq)} \rightarrow \_3\_ \text{HOH(l)} + \_1\_ \text{(NH}_4\text{)}_3\text{PO}_4\text{(aq)}$
13.  $\_1\_ \text{C}_3\text{H}_8\text{(g)} + \_5\_ \text{O}_2\text{(g)} \rightarrow \_3\_ \text{CO}_2\text{(g)} + \_4\_ \text{H}_2\text{O(l)}$
14.  $\_4\_ \text{Al(s)} + \_3\_ \text{O}_2\text{(g)} \rightarrow \_2\_ \text{Al}_2\text{O}_3\text{(s)}$
15.  $\_1\_ \text{CH}_4\text{(g)} + \_2\_ \text{O}_2\text{(g)} \rightarrow \_1\_ \text{CO}_2\text{(g)} + \_2\_ \text{H}_2\text{O(l)}$
16.  $\_2\_ \text{KNO}_3 \rightarrow \_2\_ \text{KNO}_2 + \_1\_ \text{O}_2$
17.  $\_1\_ \text{CaC}_2 + \_2\_ \text{O}_2 \rightarrow \_1\_ \text{Ca} + \_2\_ \text{CO}_2$
18.  $\_1\_ \text{C}_5\text{H}_{12} + \_8\_ \text{O}_2 \rightarrow \_5\_ \text{CO}_2 + \_6\_ \text{H}_2\text{O}$
19.  $\_1\_ \text{K}_2\text{SO}_4 + \_1\_ \text{BaCl}_2 \rightarrow \_2\_ \text{KCl} + \_1\_ \text{BaSO}_4$
20.  $\_2\_ \text{KOH} + \_1\_ \text{H}_2\text{SO}_4 \rightarrow \_1\_ \text{K}_2\text{SO}_4 + \_2\_ \text{H}_2\text{O}$
21.  $\_1\_ \text{Ca(OH)}_2 + \_2\_ \text{NH}_4\text{Cl} \rightarrow \_2\_ \text{NH}_4\text{OH} + \_1\_ \text{CaCl}_2$
22.  $\_5\_ \text{C} + \_2\_ \text{SO}_2 \rightarrow \_1\_ \text{CS}_2 + \_4\_ \text{CO}$
23.  $\_1\_ \text{Mg}_3\text{N}_2 + \_6\_ \text{H}_2\text{O} \rightarrow \_3\_ \text{Mg(OH)}_2 + \_2\_ \text{NH}_3$
24.  $\_1\_ \text{V}_2\text{O}_5 + \_5\_ \text{Ca} \rightarrow \_5\_ \text{CaO} + \_2\_ \text{V}$
25.  $\_2\_ \text{Na}_2\text{O}_2 + \_2\_ \text{H}_2\text{O} \rightarrow \_4\_ \text{NaOH} + \_1\_ \text{O}_2$
26.  $\_1\_ \text{Fe}_3\text{O}_4 + \_4\_ \text{H}_2 \rightarrow \_3\_ \text{Fe} + \_4\_ \text{H}_2\text{O}$
27.  $\_1\_ \text{Cu} + \_2\_ \text{H}_2\text{SO}_4 \rightarrow \_1\_ \text{CuSO}_4 + \_2\_ \text{H}_2\text{O} + \_1\_ \text{SO}_2$
28.  $\_2\_ \text{Al} + \_3\_ \text{H}_2\text{SO}_4 \rightarrow \_3\_ \text{H}_2 + \_1\_ \text{Al}_2\text{(SO}_4\text{)}_3$

29.  $\underline{2} \text{ Si}_4\text{H}_{10} + \underline{13} \text{ O}_2 \rightarrow \underline{8} \text{ SiO}_2 + \underline{10} \text{ H}_2\text{O}$
30.  $\underline{4} \text{ NH}_3 + \underline{1} \text{ O}_2 \rightarrow \underline{2} \text{ N}_2\text{H}_4 + \underline{2} \text{ H}_2\text{O}$
31.  $\underline{2} \text{ C}_{15}\text{H}_{30} + \underline{45} \text{ O}_2 \rightarrow \underline{30} \text{ CO}_2 + \underline{30} \text{ H}_2\text{O}$
32.  $\underline{2} \text{ BN} + \underline{3} \text{ F}_2 \rightarrow \underline{2} \text{ BF}_3 + \underline{1} \text{ N}_2$
33.  $\underline{1} \text{ CaSO}_4 \cdot 2\text{H}_2\text{O} + \underline{2} \text{ SO}_3 \rightarrow \underline{1} \text{ CaSO}_4 + \underline{2} \text{ H}_2\text{SO}_4$
34.  $\underline{2} \text{ C}_{12}\text{H}_{26} + \underline{37} \text{ O}_2 \rightarrow \underline{24} \text{ CO}_2 + \underline{26} \text{ H}_2\text{O}$
35.  $\underline{1} \text{ C}_7\text{H}_6\text{O}_3 + \underline{7} \text{ O}_2 \rightarrow \underline{7} \text{ CO}_2 + \underline{3} \text{ H}_2\text{O}$
36.  $\underline{2} \text{ Na} + \underline{1} \text{ ZnI}_2 \rightarrow \underline{2} \text{ NaI} + \underline{1} \text{ Zn}$
37.  $\underline{1} \text{ HBrO}_3 + \underline{5} \text{ HBr} \rightarrow \underline{3} \text{ H}_2\text{O} + \underline{3} \text{ Br}_2$
38.  $\underline{1} \text{ Al}_4\text{C}_3 + \underline{12} \text{ H}_2\text{O} \rightarrow \underline{4} \text{ Al(OH)}_3 + \underline{3} \text{ CH}_4$
39.  $\underline{2} \text{ Ca(NO}_3)_2 \cdot 3\text{H}_2\text{O} + \underline{3} \text{ LaC}_2 \rightarrow \underline{2} \text{ Ca(NO}_3)_2 + \underline{3} \text{ La(OH)}_2 + \underline{3} \text{ C}_2\text{H}_2$
40.  $\underline{1} \text{ CH}_3\text{NO}_2 + \underline{3} \text{ Cl}_2 \rightarrow \underline{1} \text{ CCl}_3\text{NO}_2 + \underline{3} \text{ HCl}$
41.  $\underline{1} \text{ Ca}_3(\text{PO}_4)_2 + \underline{3} \text{ SiO}_2 + \underline{5} \text{ C} \rightarrow \underline{3} \text{ CaSiO}_3 + \underline{5} \text{ CO} + \underline{2} \text{ P}$
42.  $\underline{1} \text{ Al}_2\text{C}_6 + \underline{6} \text{ H}_2\text{O} \rightarrow \underline{2} \text{ Al(OH)}_3 + \underline{3} \text{ C}_2\text{H}_2$
43.  $\underline{2} \text{ NaF} + \underline{1} \text{ CaO} + \underline{1} \text{ H}_2\text{O} \rightarrow \underline{1} \text{ CaF}_2 + \underline{2} \text{ NaOH}$
44.  $\underline{4} \text{ LiH} + \underline{1} \text{ AlCl}_3 \rightarrow \underline{1} \text{ LiAlH}_4 + \underline{3} \text{ LiCl}$
45.  $\underline{2} \text{ CaF}_2 + \underline{2} \text{ H}_2\text{SO}_4 + \underline{1} \text{ SiO}_2 \rightarrow \underline{2} \text{ CaSO}_4 + \underline{1} \text{ SiF}_4 + \underline{2} \text{ H}_2\text{O}$
46.  $\underline{3} \text{ CaSi}_2 + \underline{2} \text{ SbCl}_3 \rightarrow \underline{6} \text{ Si} + \underline{2} \text{ Sb} + \underline{3} \text{ CaCl}_2$
47.  $\underline{2} \text{ TiO}_2 + \underline{1} \text{ B}_4\text{C} + \underline{3} \text{ C} \rightarrow \underline{2} \text{ TiB}_2 + \underline{4} \text{ CO}$
48.  $\underline{4} \text{ NH}_3 + \underline{5} \text{ O}_2 \rightarrow \underline{4} \text{ NO} + \underline{6} \text{ H}_2\text{O}$
49.  $\underline{1} \text{ SiF}_4 + \underline{8} \text{ NaOH} \rightarrow \underline{1} \text{ Na}_4\text{SiO}_4 + \underline{4} \text{ NaF} + \underline{4} \text{ H}_2\text{O}$
50.  $\underline{2} \text{ NH}_4\text{Cl} + \underline{1} \text{ CaO} \rightarrow \underline{2} \text{ NH}_3 + \underline{1} \text{ CaCl}_2 + \underline{1} \text{ H}_2\text{O}$
51.  $\underline{4} \text{ NaPb} + \underline{4} \text{ C}_2\text{H}_5\text{Cl} \rightarrow \underline{1} \text{ Pb(C}_2\text{H}_5)_4 + \underline{3} \text{ Pb} + \underline{4} \text{ NaCl}$
52.  $\underline{1} \text{ Be}_2\text{C} + \underline{4} \text{ H}_2\text{O} \rightarrow \underline{2} \text{ Be(OH)}_2 + \underline{1} \text{ CH}_4$
53.  $\underline{4} \text{ NpF}_3 + \underline{1} \text{ O}_2 + \underline{4} \text{ HF} \rightarrow \underline{4} \text{ NpF}_4 + \underline{2} \text{ H}_2\text{O}$
54.  $\underline{3} \text{ NO}_2 + \underline{1} \text{ H}_2\text{O} \rightarrow \underline{2} \text{ HNO}_3 + \underline{1} \text{ NO}$
55.  $\underline{3} \text{ LiAlH}_4 + \underline{4} \text{ BF}_3 \rightarrow \underline{3} \text{ LiF} + \underline{3} \text{ AlF}_3 + \underline{2} \text{ B}_2\text{H}_6$