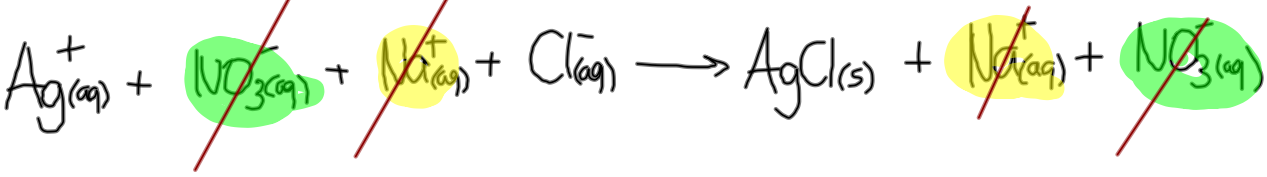
Reactions in Aqueous Solutions

$AgNO_{3(aq)} + NaCl_{(aq)} \Rightarrow AgCl_{(s)} + NaNO_{3(aq)}$

Complete Ionic Equation

An equation that shows dissolved ionic compounds as dissociated free ions.



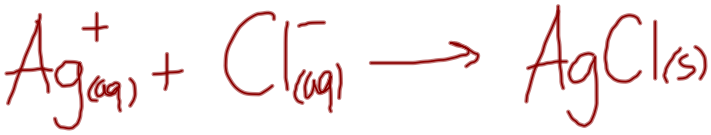
Spectator Ion

An ion that appears on both sides of the equation and is not directly involved in the reaction.

$Na^+_{(aq)}$, $NO^-_{3(aq)}$

Net Ionic Equation

An equation for a reaction in solution that only shows the particles directly involved in the reaction.



***All net ionic equations must be balanced with respect to both mass and charge**

Pb^{2+} NO_3^-

$Pb_{(s)} + AgNO_{3(aq)} \Rightarrow Ag_{(s)} + Pb(NO_3)_{2(aq)}$

$Pb_{(s)} + Ag^+_{(aq)} + NO^-_{3(aq)} \longrightarrow Ag_{(s)} + Pb^{2+}_{(aq)} + NO^-_{3(aq)}$

$Pb_{(s)} + 2Ag^+_{(aq)} \longrightarrow 2Ag_{(s)} + Pb^{2+}_{(aq)}$

Ba^{2+} Cl^- Ag^+ NO_3^-

barium chloride and silver nitrate

$$BaCl_{2(aq)} + AgNO_{3(aq)} \rightarrow Ba(NO_3)_{2(aq)} + AgCl_{(s)}$$

$$Ba^{2+}_{(aq)} + Cl^-_{(aq)} + Ag^+_{(aq)} + NO^-_{3(aq)} \rightarrow Ba^{2+}_{(aq)} + NO^-_{3(aq)} + AgCl_{(s)}$$

$Ba^{2+}_{(aq)}$, $NO^-_{3(aq)}$

$$Ag^+_{(aq)} + Cl^-_{(aq)} \rightarrow AgCl_{(s)}$$

Homework

Worksheet
p. 343 #28, 29
p. 344 #30-35

Cu^{2+} NO_3^- Ca^{2+} OH^-

Copper(II)nitrate and calcium hydroxide

$$Cu(NO_3)_{2(aq)} + Ca(OH)_{2(aq)} \longrightarrow Cu(OH)_{2(s)} + Ca(NO_3)_{2(aq)}$$

$$Cu^{2+}_{(aq)} + 2NO^-_{3(aq)} + Ca^{2+}_{(aq)} + 2OH^-_{(aq)} \longrightarrow Cu(OH)_{2(s)} + Ca^{2+}_{(aq)} + 2NO^-_{3(aq)}$$

$NO^-_{3(aq)}$, $Ca^{2+}_{(aq)}$

$$Cu^{2+}_{(aq)} + 2OH^-_{(aq)} \longrightarrow Cu(OH)_{2(s)}$$