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.

$Ag^+_{(aq)} + NO_{3(aq)}^- + Na^+_{(aq)} + Cl^-_{(aq)} \longrightarrow AgCl_{(s)} + Na^+_{(aq)} + NO_{3(aq)}^-$

Spectator Ion

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

$NO_{3(aq)}^-$, $Na^+_{(aq)}$

Net Ionic Equation

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

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

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

Pb^{2+} $Ag^+ NO_3^-$

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

metal

Complete Ionic:

$Pb_{(s)} + 2Ag^+_{(aq)} + 2NO_{3(aq)}^- \rightarrow 2Ag_{(s)} + Pb^{2+}_{(aq)} + 2NO_{3(aq)}^-$

Spectator Ion(s):

$NO_{3(aq)}^-$

Net Ionic:

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

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

barium chloride and silver nitrate

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

Reactions in Aqueous Solutions

$Ag^+ NO_3^-$ $Na^+ Cl^-$

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

$Ag^+_{(aq)} + NO^-_{3(aq)} + Na^+_{(aq)} + Cl^-_{(aq)} \longrightarrow AgCl_{(s)} + Na^+_{(aq)} + NO^-_{3(aq)}$

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

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

Homework

Worksheet

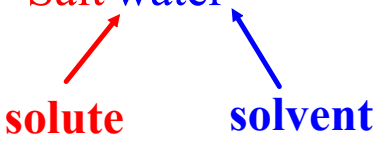
Solutions

Solution - homogeneous (uniform) mixture of a solute and a solvent.

⇒solute - substance dissolved

⇒solvent - substance doing dissolving (liquid)

Ex. Salt water

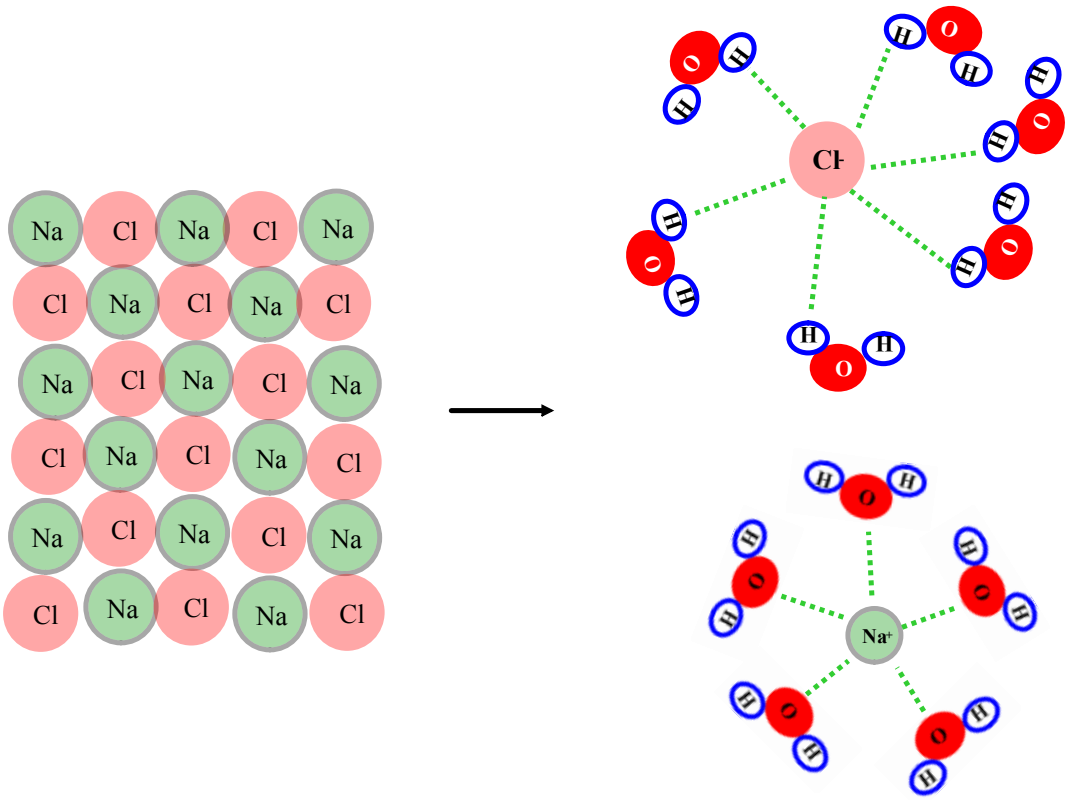


If the amount of solute that can dissolve in a solvent is large, then the solute is said to have a*high solubility*.

If the amount of solute that can dissolve in a solvent is small, then the solute is said to have a*low solubility*.

Solid substances formed from reactions in solutions are known as **precipitates**.

What happens when an ionic compound dissolves??



This process is called solvation.