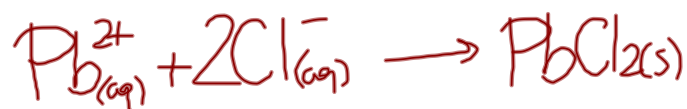
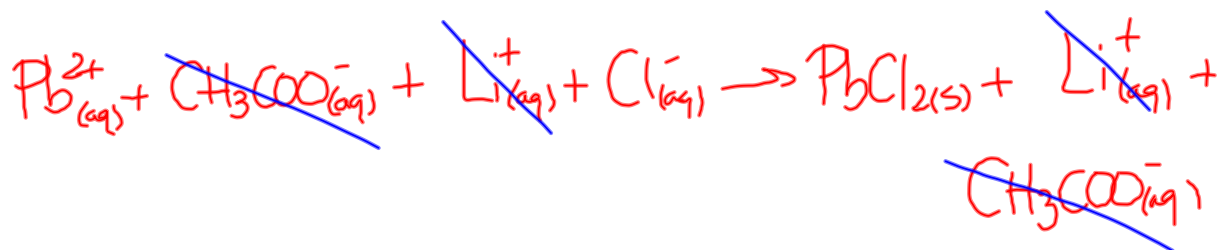
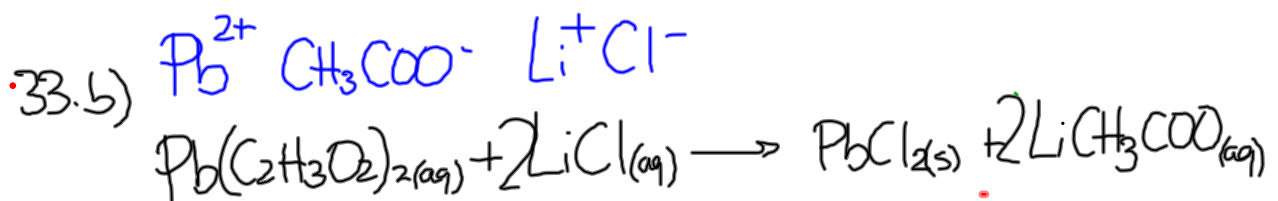
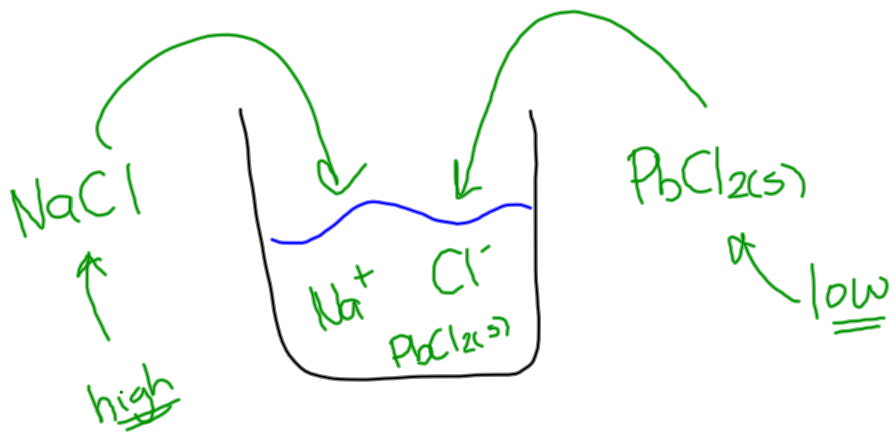


Check Homework - Worksheet





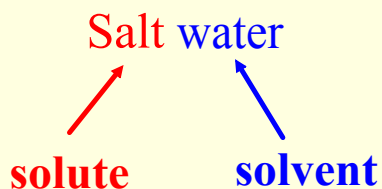
Solutions

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

⇒ solute - substance dissolved

⇒ solvent - substance doing dissolving (liquid)

Ex.

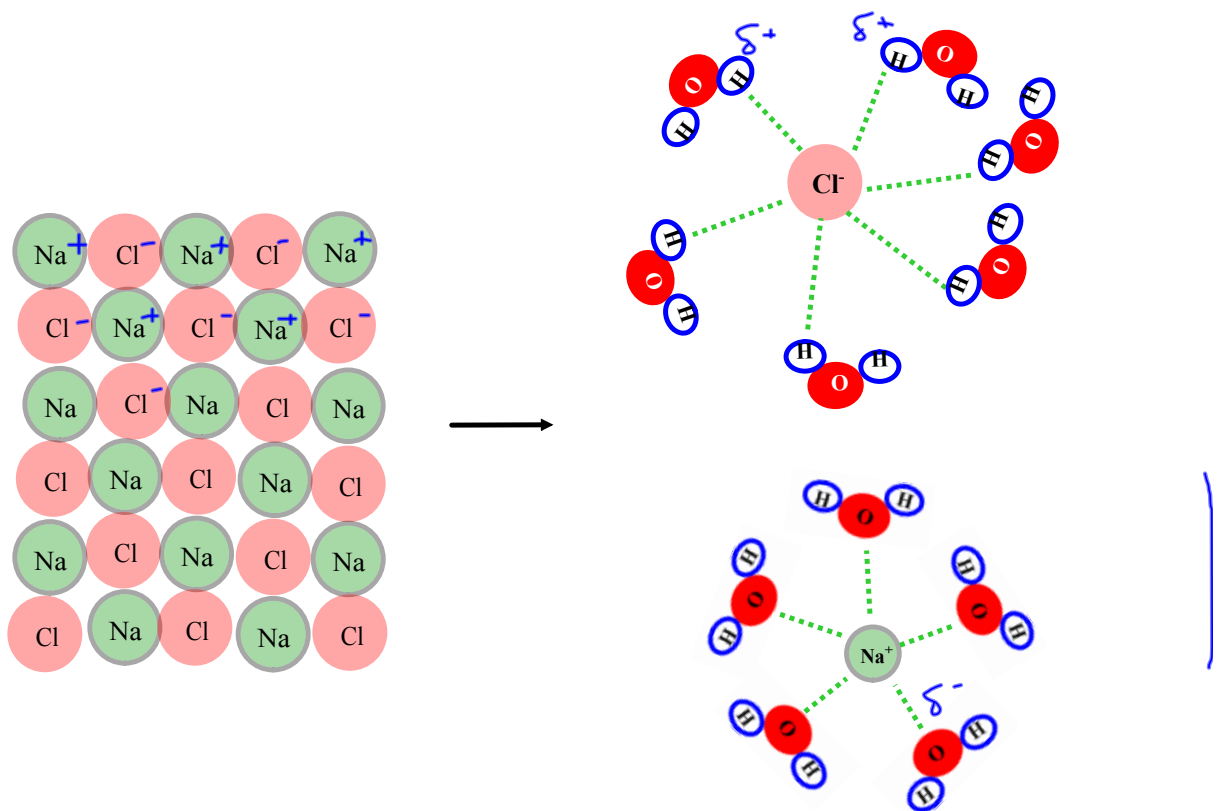


If the amount of solute that can dissolve in a solvent is large, then the solute is said to have a *high solubility*.

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.

Solubility Rules

- Polar solvents will dissolve ionic compounds and polar compounds
- Nonpolar solvent will dissolve nonpolar compounds
Ex. oil in gasoline

"Like dissolves like"

Solution Formation

There are three factors that affect how fast a substance will dissolve:

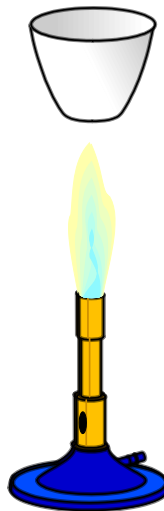
- 1) temperature
- 2) agitation (stirring)
- 3) surface area of dissolving particles

Solubility

solubility - concentration of a saturated solution at a room temperature (normally 20°C).

saturated solution - solution at maximum concentration, in which no more solute can be dissolved

supersaturated solution - solution contains more solute than it can theoretically hold at a given temperature



Solubility Generalizations

- solubility of solids increases with an increase in temperature
- solubility of gases decreases with an increase in temperature
- some liquids have no maximum limit of dissolving
(miscible liquids)
- some liquids will not dissolve in other liquids
(immiscible liquids)
- as the partial pressure of a gas increases, its solubility increases

Henry's Law

$$\frac{S_1}{P_1} = \frac{S_2}{P_2}$$

$$\begin{array}{l} 0.77 \text{ g/L} @ 3.5 \text{ atm} \\ ? @ 1.0 \text{ atm} \end{array}$$

$$\frac{0.77 \text{ g/L}}{3.5 \text{ atm}} = \frac{S_2}{1.0 \text{ atm}}$$

$$0.77 \text{ g/L} (1.0 \text{ atm}) = S_2 (3.5 \text{ atm})$$

$$S_2 = \frac{(0.77 \text{ g/L})(1.0 \text{ atm})}{(3.5 \text{ atm})}$$

$$S_2 = 0.22 \text{ g/L}$$

p. 477 #1-7