

**General Chemistry**  
**Mr. MacGillivray**  
**Worksheet:**  
**Solubility and Ionic Equations**

The solubility graph may be useful in answering some of the following questions.

- Solubility** is a measure of how \_\_\_\_\_ of a substance can be dissolved in a given amount of solvent, whereas the **rate of solvation** is a measure of how \_\_\_\_\_ the substance can be dissolved.
- In general, the solubility of solids (increases / decreases) as the temperature of a solid-in-liquid solution is increased.
- In general, the solubility of gases (increases / decreases) as the temperature of a gas-in-liquid solution is increased.
- What is “the bends”? Explain it in terms of solubility.
- What happens to a bottle of Coke after you open it? Explain this in terms of solubility.
- Fill in the following table.

Substance	Solubility (g/100 g H <sub>2</sub> O) at this temperature:			
	0°C	20°C	50°C	70°C
KNO <sub>3</sub>				
NH <sub>3</sub>				
NaCl				

- A solution of KNO<sub>3</sub> at 10 °C, in which 40 g of solute has been dissolved in 100 g of H<sub>2</sub>O would be considered (saturated/unsaturated/supersaturated).
- A solution of KNO<sub>3</sub> at 25 °C, in which 40 g of solute has been dissolved in 100 g of H<sub>2</sub>O would be considered (saturated/unsaturated/supersaturated).
- A solution of KNO<sub>3</sub> at 50 °C, in which 40 g of solute has been dissolved in 100 g of H<sub>2</sub>O would be considered (saturated/unsaturated/supersaturated).
- A solution of KNO<sub>3</sub> at 50 °C, in which 100 g of solute has been dissolved in **250 g of H<sub>2</sub>O** would be considered (saturated/unsaturated/supersaturated).
- Write the chemical equation, the complete ionic equation, and the net ionic equation for the following aqueous phase reactions :
  - barium chloride + sodium sulfate
  - potassium chromate + calcium nitrate
  - lithium carbonate + calcium chloride