

## Quiz for Video 8 – Solubility

- As Temperature increases, what happens to the solubility of ionic compounds (in general)?
  - It increases
  - It decreases
  - It stays the same
- When 1 mole of  $\text{Fe}(\text{C}_2\text{H}_3\text{O}_2)_2$  completely dissociates, how many moles of ions are formed in total?
  - 1 mole
  - 2 moles
  - 3 moles
  - 4 moles
- The solubility product ( $K_{sp}$ ) is used to determine how much a solid will dissolve in water. Using [Appendix J of OpenStax Chemistry 2e](#), find the value of  $K_{sp}$  for Strontium Carbonate ( $\text{SrCO}_3$ ).
  - $3.0 \times 10^{-4}$
  - $3.6 \times 10^{-5}$
  - $7.0 \times 10^{-10}$
  - $4.0 \times 10^{-7}$
- Which of the following compounds has the lowest solubility based on its  $K_{sp}$ ? Use [Appendix J of OpenStax Chemistry 2e](#) to determine  $K_{sp}$  values.
  - $\text{BaF}_2$
  - $\text{CaF}_2$
  - $\text{MgF}_2$
  - $\text{NaF}$
- Without using a table, determine which compound below has the greatest solubility.
  - $\text{Na}_2\text{SO}_4$
  - $\text{CaSO}_4$
  - $\text{PbSO}_4$
  - $\text{CuSO}_4$
- What must be true to directly compare  $K_{sp}$  to molar solubility ( $S$ )?
  - The temperature of the solvent must be low
  - The stoichiometry of the compounds compared must be the same
  - The cation charge must be +2
  - The mass of the solute must be low
- Which of the answers below best describes the difference between  $K_{sp}$  (solubility product) and  $S$  (molar solubility)?
  - They are the same
  - $K_{sp}$  is always smaller
  - $S$  is a physical value, while  $K_{sp}$  is a mathematical constant
  - Only soluble products have a  $K_{sp}$
- Consider the following reaction:
$$\text{AgCl(s)} \rightleftharpoons \text{Ag}^+ + \text{Cl}^-$$
What will occur if  $\text{Cl}^-$  is added to the solution?
  - Reaction will shift to the right
  - Reaction will shift to the left
  - No change
- What is the common ion effect?
  - When an ion that is part of a compound is present, solubility will be lower
  - When an ion that is part of a compound is present, solubility will be higher
  - Solubility depends on the temperature
  - All ions behave the same