

CONCEPT: SOLUBILITY: TEMPERATURE EFFECT

When an ionic solid dissolves, ions leave the solid and become dispersed in the solvent.

In a(n) _____ solution the maximum amount of dissolved solute is present in the solvent.

In a(n) _____ solution additional amounts of solute can be further dissolved in the solvent.

In a(n) _____ solution more than the equilibrium concentration of solute has been dissolved.

EXAMPLE: Caffeine is about 10 times as soluble in warm water as in cold water. A student puts a hot-water extract caffeine into an ice bath, and some caffeine crystallizes. What is the identity of the solution before it's been placed in an ice bath?

- a) Saturated
- b) Super saturated
- c) Unsaturated
- d) Not enough information to answer the question.

PRACTICE: In general, as the temperature increases, the solubility of gas in a given liquid _____, and the solubility of most solids in a given liquid _____.

- a) Increases, increases
- b) Increases, decreases
- c) Decreases, increases
- d) Decreases, decreases