

Supersaturated Solutions

When a saturated solution of a solute whose solubility increases with temperature is cooled, the excess solute usually comes out of solution, leaving the solution saturated at the lower temperature. But sometimes, if the solution is left to cool undisturbed, the excess solute does not separate and a supersaturated solution is produced. A **supersaturated solution** is a solution that contains more dissolved solute than a saturated solution contains under the same conditions. A supersaturated solution may remain unchanged for a long time if it is not disturbed, but once crystals begin to form, the process continues until equilibrium is reestablished at the lower temperature.

Solubility Values

The **solubility** of a substance is the amount of that substance required from a saturated solution with a specific amount of solvent at a specified temperature. The solubility of sugar, for example, is 204g per 100. G of water at 20.°C. The temperature must be specified because solubility varies with temperature. For gases, the pressure must also be specified. The rate at which a solid dissolves is unrelated to its solubility at that temperature. The maximum amount of a given solute that dissolves and reaches equilibrium is always the same under the same conditions.

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Page 2 of 2