

Chemistry – Chapter 16 Book problems #1: Solubility, solution classification, gas solubility

1. The solubility of a gas in water is 0.16 g/L at 104 kPa. What is the solubility when the pressure of the gas is increased to 288 kPa? Assume the temperature remains constant.
2. A gas has a solubility in water at 0°C of 3.6 g/L at a pressure of 1.0 atm. What pressure is needed to produce an aqueous solution containing 9.5 g/L of the same gas at 0°C?
3. What determines how fast a substance will dissolve?
4. How can you describe the state of equilibrium in a saturated solution that contains undissolved solute?
5. What condition(s) determine the solubilities of solid, liquid, and gaseous solutes in a solvent?
6. Name a unit to express solubility.
7. What determines whether or not a substance will dissolve?
8. What would you do to change
 - a. a saturated solid/liquid solution to an unsaturated solution?
 - b. a saturated gas/liquid solution to an unsaturated solution?
9. The solubility of a gas is 0.58 g/L at a pressure of 104 kPa. What is its solubility if the pressure increases to 250 kPa at the same temperature?