

Dissolving and Solubility

Factors that increase rate of dissolving

1. Temperature – molecules move faster, therefore more collisions.
2. Agitations – brings fresh solvent in contact with solute
3. Surface Area – more contact between solvent and solute.

The Process of dissolving

1. Forces between particles in solid must be broken. Ex. ionic bonds, dipole-dipole attraction.
2. Intermolecular forces in solvent must be broken.
3. Attraction formed between solvent and solute particles. Ex. Dipole-ion attraction.

* Energy released in Step 3 must be greater than step 1 and 2 in order for a substance to dissolve.

Ex 1. NaCl

Ex 2. Glucose

Factors that affect solubility

1. Particle size – small molecules are more soluble
2. Temperature – solubility of solids increases with temperature. ex coffee
 - solubility of gases decreases with temperature (increased molecule speed forces gas out of solution). Ex. fish in warm water.
3. Pressure – solubility of a gas increases with pressure. Ex. pop bottle, the bends.