

**Haber process** the manufacture of ammonia from nitrogen and hydrogen, carried out at high pressure and high temperature with the aid of a catalyst

**Half – life (of a radioactive sample)** the time required for the number of nuclides in a radioactive sample to reach half the original number of nuclides

**Half – reactions** the two parts of an oxidation – reduction reaction, one representing oxidation, the other reduction

**Halogen** a Group 7 element

**Hard water** water from natural sources that contains relatively large concentrations of calcium and magnesium ions

**Heating / cooling curve** a plot of temperature versus time for a substance, where energy is added at a constant rate

**Heisenberg uncertainty principle** a principle stating that there is a fundamental limitation to how precisely we can know both the position and the momentum of a particle at a given time

**Herbicide** a pesticide applied to kill weeds

**Heterogeneous equilibrium** an equilibrium involving reactants and/or products in more than one state

**Heterogeneous mixture** a mixture that has different properties in different regions of the mixture

**Heterogeneous reaction** reaction involving reactants in different phases

**Homogeneous equilibrium** an equilibrium system in which all reactants and products are in the same state

**Homogeneous mixture** a mixture that is the same throughout; a solution

**Homogeneous reaction** reaction involving reactants in only one phase

**Hydration** the interaction between solute particles and water molecules

**Hydrocarbon** a compound of carbon and hydrogen

**Hydrocarbon derivative** an organic molecule that contains one or more elements in addition to carbon and hydrogen

**Hydrogen bonding** unusually strong dipole – dipole attractions that occur among molecules in which hydrogen is bonded to a highly electronegative atom

**Hydronium ion** the  $\text{H}_3\text{O}^+$  ion; a hydrated proton

**Hypothesis** one or more assumptions put forth to explain observed phenomena