5 Postulates of Kinetic Theory

(1) Molecules move continuously and randomly in straight lines in all directions and various speeds.

-- Properties of a gas that depend on motion of molecules, such as pressure, will be the same in all directions.

(2) Gases are composed of molecules whose size is negligible compared to the average distance between them.

-- Most of the volume occupied by a gas is empty space.

-- Ignore the volume occupied by the molecules.

(3) Intermolecular forces (attractive and repulsive forces between molecules) are negligible, except when the molecules collide with each other.

-- A molecule continues moving in a straight line with undiminished speed until it collides with another gas molecule or with the walls of the container.

(4) Molecular collisions are elastic.

-- Energy can be transferred between molecules but the total average kinetic energy remains constant.

(5) The average kinetic energy of the molecules is proportional to the absolute temperature, K (kelvin).

-- At any given temperature, the molecules of ALL gases have the SAME average kinetic energy.

– The higher the temperature, the greater the average kinetic energy.