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1350 (11)  
II<sup>nd</sup> Part

## Kinetic theory of gas

The kinetic theory of gases is a historically significant, but simple, model of the thermodynamic behavior of gases, with which many principal concepts of thermodynamics were established. The model describes a gas as a large number of identical

~~Sub~~ submicroscopic, particles, all of which are in constant, rapid random motion. Their size is assumed to be much smaller than the average distance between the particles. The particles undergo random elastic collisions between themselves and with the enclosing walls of the container. The basic version of the model describes the ideal gas and considers no other interactions between the particles and thus the nature

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form negative ions by gaining electrons for example, oxygen (O) is a non-metal which forms negatively charged oxide ions ( $O^{2-}$ ) by gaining electrons. In fact, non-metals are known as electronegative elements because they can form negative ions by gaining electrons.

There is however an exception Hydrogen (H) is the only non-metal element which loses electrons to form positive ions hydrogen ions ( $H^+$ ) we will discuss the reason for this in higher classes.

non-metals are small in number as compared to metals. but they play a very important role in our daily life. In fact life would not have been possible without the

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## METALS AND NON-METALS

**NON-METALS** → Non-metals are the elements that do not conduct heat and electricity, and are neither malleable nor ductile.

They are brittle, non-metals are not lustrous.

They have dull appearance. Non-metals are generally soft and not strong. They are light

substances. Example of non-metals are → Carbon,

Sulphur, Phosphorus, Silicon, Hydrogen, Oxygen,

Nitrogen, Chlorine, Bromine, Iodine, Helium, Neon,

Argon etc.

During chemical reactions, non-metals

can form negative ions by gaining electrons.

Based on this observation we can write

another definition of non-metals as follows:

~~Non~~ Non-metals are the elements which

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presence of ~~not~~ non-metals on the earth. For example, Carbon is one of the most important non-metals because all the life on this earth is based on Carbon compounds. This is because the Carbon compounds like, proteins, ~~fat~~ fats, Carbohydrate, vitamins and enzymes ~~etc.~~ etc, are essential for the growth and development of living organism. Another non-metal oxygen is equally important for the existence of life.

The most abundant non-metal in the earth's crust is oxygen; which constitutes about 50% of the earth crust.

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of kinetic energy transfers during collision is strictly thermal.

The kinetic theory of gases explains the macroscopic properties of gases. Such as volume, pressure and temperature as well as transport properties such as viscosity, thermal conductivity and mass diffusivity. The model also accounts for related phenomena such as Brownian motion.

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