

# By Dr kaushlendra kumar

2151

Page

5

Some of the examples of metals are Iron, Aluminium, Copper, Silver, Gold, Platinum, Zinc etc. A majority of the known elements are metals. All the metals are solids except mercury which is a liquid metal.

During chemical reaction, metal can form positive ions by losing electrons. Based on this observation we can write another definition of metals as follows:  $\rightarrow$  Metals are the elements (except hydrogen) which form positive ions by losing electrons (or donating electrons). Metals are also known as electropositive elements because they can form positive ions by losing electrons.

Definition of Boiling Point

Boiling point is defined as the temperature at which the liquid (solvent) will be vaporized when pressure is reduced sufficiently that a bubble has a higher boiling point than a pure solvent. This happens whenever a reasonable amount of salt is added to a pure solvent. Such an increase in boiling point can be measured accurately using an ebullioscope.

The boiling point elevation is a colligative property which means that it is dependent of the presence of dissolved particles and their number.

2/5/

## METALS AND NON METALS

32/8/21

There are 118 chemical elements known as at present. There are similarities as well as differences in the properties of these elements.

On the basis of their properties, all the elements can be divided into two main groups: metals and non-metals. Both metals as well as non-metals are used in our daily life. We also use a large no. of compounds of metals and non-metals.

Metals: → Metals are the elements that conduct heat and electricity and are malleable and ductile (malleable means which can be beaten with a hammer to form thin sheets, & without breaking.) (Ductile means which can be stretched to form thin wires.)

2/5/

Page-4

Page-3

are only present in the liquid phase and do not enter into the gas phase

Put in vapor pressure terms, a liquid boils at the temperature when its vapor pressure equals the surrounding pressure. For the solvent, the presence of the solute decreases its vapor pressure by dilution.

A nonvolatile solute has a vapor pressure is zero, so the vapor pressure of the solution is less than the vapor pressure of the solvent.

Thus, a higher temperature is needed for the vapor pressure to reach the surrounding pressure, and the boiling point is ~~et~~ elevated.

Page 2

but not their identity. It is an effect of the dilution of the solvent in the presence of a solute. It is a phenomenon that happens for all solutions in all solutions, even in ideal solutions and does not depend on any specific solvent-solute interaction. The boiling point elevation happens both when the solute is an electrolyte, such as various salts and a nonelectrolyte in thermodynamic terms, the origin of the boiling point elevation is entropic and can be explained in terms of the vapor pressure or chemical potential of the solvent. In both cases, the explanation depends on the fact that in any solution,