

Degree of freedom

It is defined as the number of independent variables such as temperature, pressure & concentration which must be specified in order to define the system completely.

Some conclusions are there:-

- (i) The greater the number of components in a system, the greater is the number of degrees of freedom for a given no. of phases.
- (ii) The greater the number of phases, the smaller is the number of degree of freedom such as T , P and composition.
- (iii) For a given number of components, the number of phases is maximum when the degree of freedom is zero.

If degree of freedom is zero $\rightarrow$ the system is invariant

" " 1 $\rightarrow$ " " monovariant

" " 2 $\rightarrow$ bivariant.

For a one component system, the maximum number of phases is three and for a two-component system, the maximum no. of phases is four.