

The Gibbs phase rule $\rightarrow$

J. Willard Gibbs, states that if the equilibrium in a heterogeneous system is not affected by gravity or by electrical and magnetic forces, the number of degrees of freedom F , of the system is related to the number of components, C , and the number of phases, P , existing at equilibrium with one another ^(R)

$$F = C - P + 2$$

One Component System $\rightarrow$

Minimum no. of phases = 1

$$F = C - P + 2 = 1 - 1 + 2 = 2$$

Bivariant $\rightarrow$ Specified by two variables (T & P).

if there are two phases.

$$F = C - P + 2 = 1 - 2 + 2 = 1$$

monovariant $\rightarrow$ Specified by one variable (T or P)



If the temperature is fixed, the pressure of the vapour is fixed automatically. This is b/c at each temperature, there can be one and only one vapour pressure.