



# Types of Solid Solutions



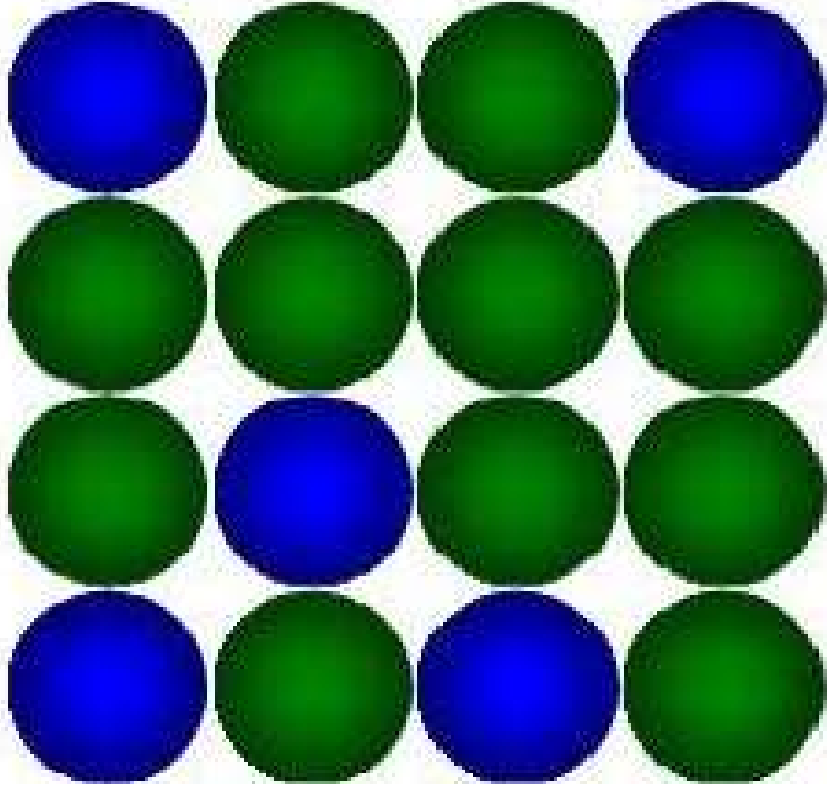
- **Substitutional solid solutions**
  - (i) Random
  - (ii) Ordered
- **Interstitial solid solutions**



# Substitutional Solid Solutions



## Substitutional solid solution



Solvent metal atom

Solute element atom

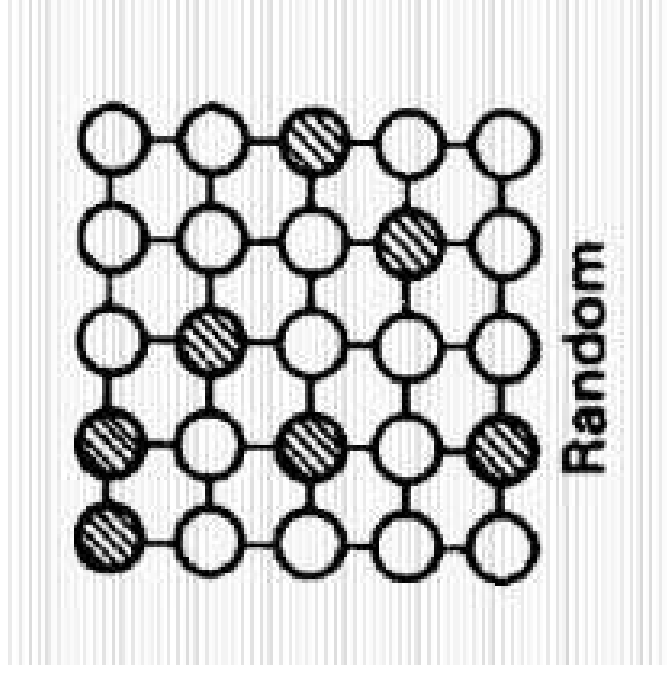


## Random Substitutional Solid Solutions



- In the formation of a Substitutional solid solution, the solute atoms do not occupy any specific position but are distributed at random in lattice structure of the solvent. This alloy is said to be in a random or disordered condition.

- Examples: Copper-Zinc

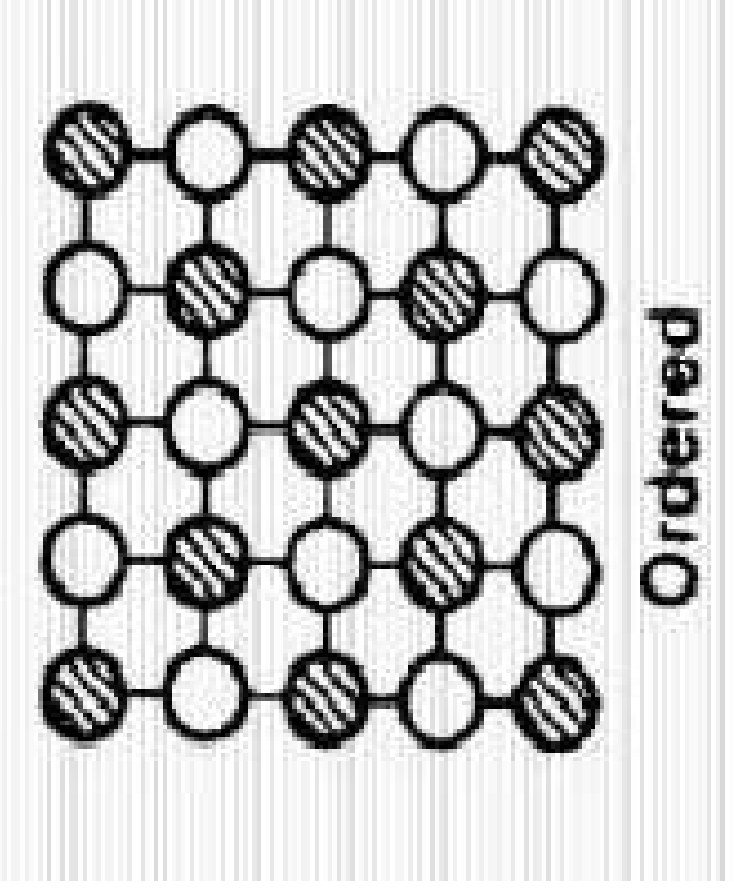




## Ordered Substitutional Solid Solutions



- If the solute and solvent atoms take up some preferred position, then the solution is called ordered Substitutional solid solution.
- Examples: Gold-Copper





# Interstitial Solid Solutions



- In interstitial solid solution, the solute atoms fit into the space between the solvent or parent atoms. These spaces or voids are called interstices.
- Interstitial solid solution can form only when one atom is much larger than another.
- Examples: Iron- Carbon

Interstitial solid solution

