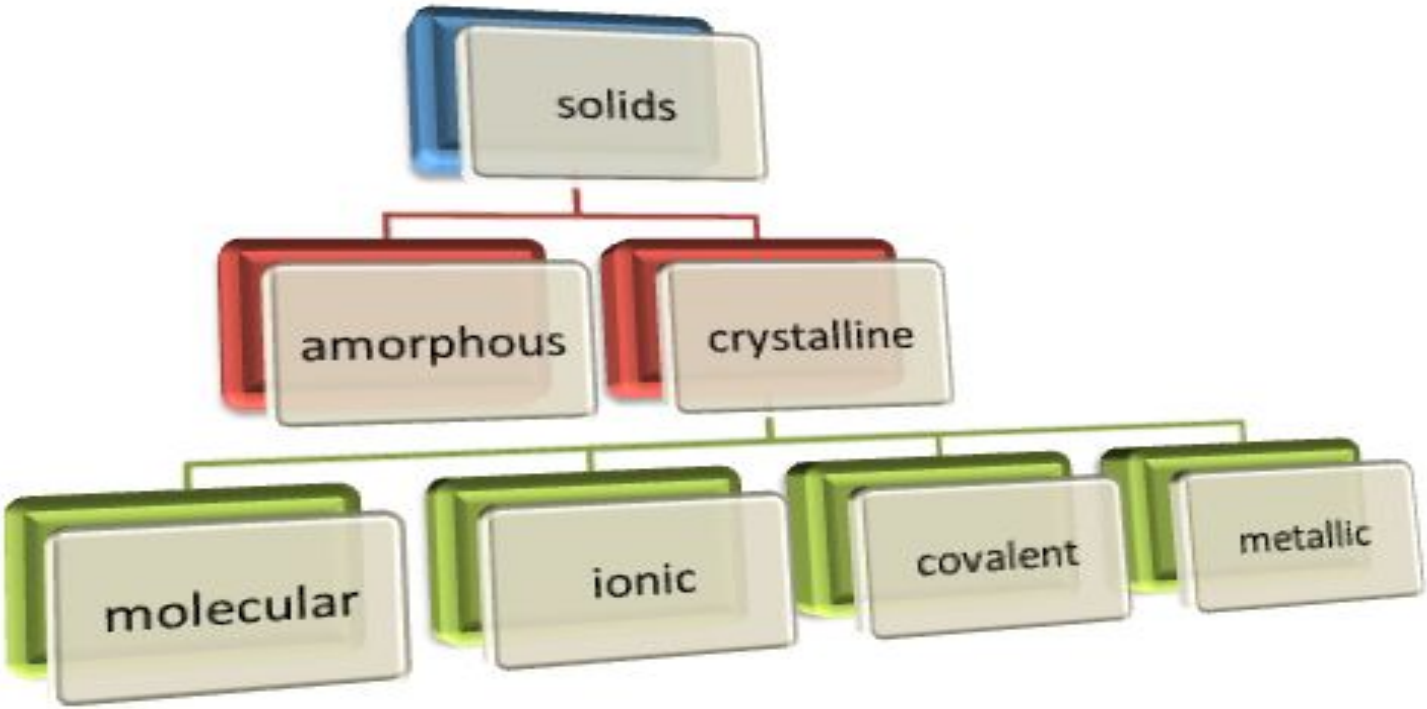
Structure of solids

Content

1. Classification of solids
2. Crystalline and Amorphous solids
3. Crystalline solids
4. Questions

Classification of solids



Crystalline

1. Crystalline solids have orderly arrangement of constituent particles
2. they have definite melting and boiling point
3. they are true solids
4. They are anisotropic which means they have different physical properties in different directions
5. examples:diamonds,table salts
6. definite heat of fusion

Amorphous

1. Amorphous solids have random arrangement of constituent particles
2. they have range of melting and boiling point
3. they are pseudo solids OR super cooled liquids
4. They are isotropic which means they have same physical properties in different directions
5. examples :glass,rubber,plastics
6. no definite heat of fusion

Arrangement of particles in crystalline and amorphous solids

A B A B A B A B A B A B

B A B A B A B A B A B A

A B A B A B A B A B A B

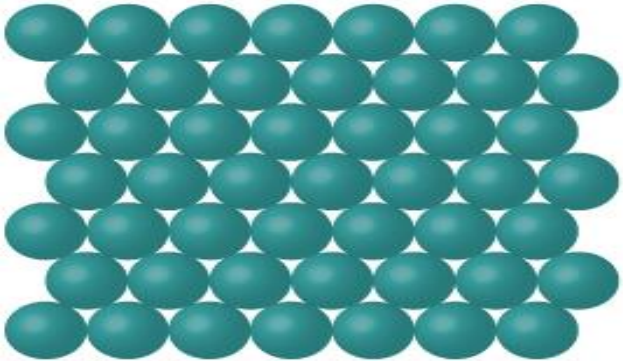
Crystalline solids

A A A A B B A B A B B

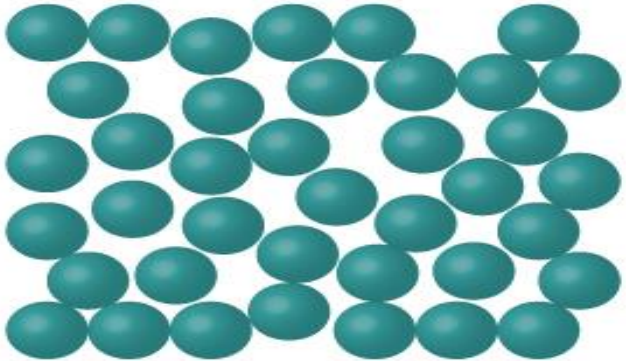
A B A B A A A B B B A

A A A A B B A B A B B

Amorphous solid

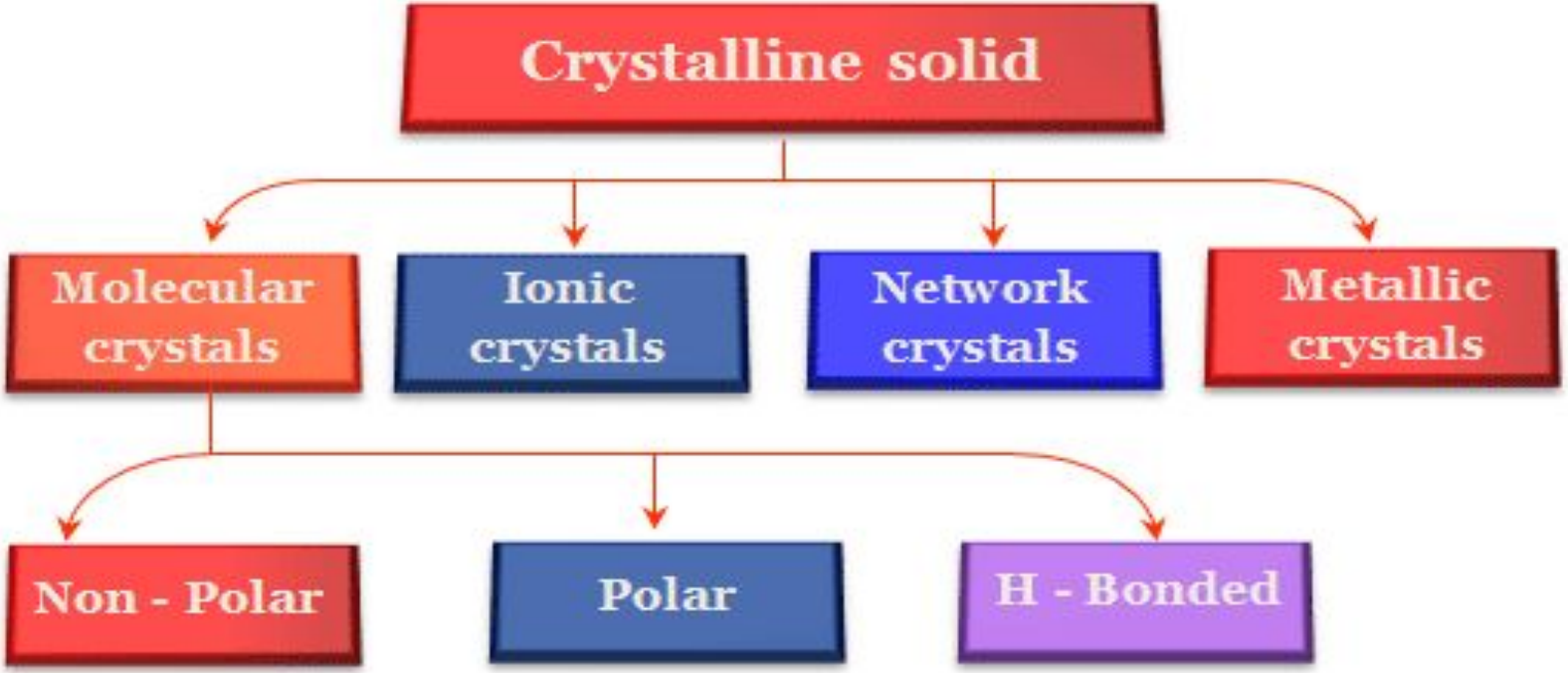


Crystalline



Amorphous

Classification of crystalline solids

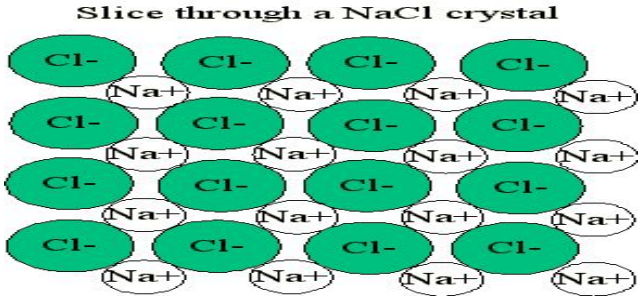


1.Molecular solids are the solids where constituent particles are molecular.they are classified as

a)polar solids like HCL,SO2 ETC

b)Non -polar solids like CO2,CL2,H2,CH4 etc

2.Ionic solids are those where the constituent particles are ions like NaCl,MgCl2,CaO etc



Metallic solids:These solids are mostly metals with sea of electrons in which position of metal ions are embedded at fixed positions.

Eg.Brass,Copper,Nickel

Covalent solids/Networking solids : 3 Dimensional carbon compounds where constituent particles are carbon atoms

Eg:diamonds,graphite etc

Questions

1. Orderly arrangement of constituent particles are observed in _____ solids
2. Amorphous solids are isotropic because_____
3. _____an example of amorphous solids
4. Crystalline solids in which the constituents particles are ions are called
5. _____can not be constituent particles for any solids
6. Classify following into types of solid
   P_4O_{10},Graphite,Brass,I_2,Plastic,NaCl