

Ch 13 HW: See Asses 15-19 Rec Con 47,57,81,82,86,90  
Sec 13.3

obj: Describe how the difference in the organization of particles distinguishes solids from liquids and gases.

## Solids

- The particles in solids are very close and the attractive force btw the particles is extremely large.

\* Solids have a rigid structure and a fixed volume.

## Properties of Solids

- Melting is a change from a solid to a liquid

\* Melting pt is a physical property of a solid which is the temperature where the solid melts.

1/10/2003 8:44 AM

- Freezing → The conversion of a liquid to a solid.

\* The freezing pt and melting point of a solid are the same temperature.

- Most solids are in a crystalline structure.

\* They have a 3-Dimensional Repeated Structure.

- The repeated structure is called a crystal lattice.

Jan 13 - 11:44 AM

- The unit cell is the smallest particle of the crystal that has the crystal lattice.
- Ionic Solids generally have high melting pts. ( $T > 300^{\circ}\text{C}$ )
- Molecular Solids generally have Low melting points ( $< 300^{\circ}\text{C}$ )
- Some Solids are Amorphous Solids
  - \* Solids w/o a crystalline structure.
  - \* Do not have a single melting point.
  - \* Plastics, glass and candy.

Jan 13 - 11:49 AM

- Some solids have allotropes.
- \* Allotropes - different forms of the same substance.
- \* Carbon - Graphite.  
Diamond  
Buckminsterfullerene
- \* Allotropes have different physical and chemical properties.

Jan 13 - 12:00 PM