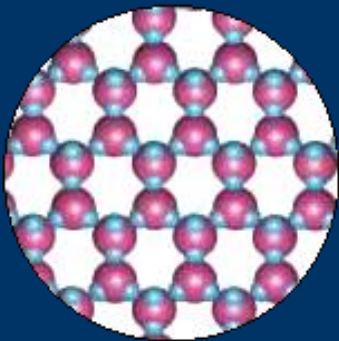


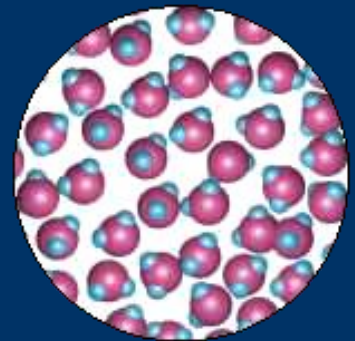
Liquids & Solids



II. Physical Properties



(p. 363 - 371)



Review of Intermolecular Forces - IMF

	LONDON DISPERSION FORCES	DIPOLE-DIPOLE FORCES	HYDROGEN BONDING
Definition	<ul style="list-style-type: none"> • Attraction between 2 instantaneous dipoles. • Asymmetrical electron distribution. • All atoms & molecules. 	<ul style="list-style-type: none"> • Attraction between 2 permanent dipoles. • Polar molecules. 	<ul style="list-style-type: none"> • Attraction between molecules with N-H, O-H, & F-H bonds. • Extremely polar bonds \Rightarrow very strong dipole-dipole force.
Diagram			
Relative Strength	<ul style="list-style-type: none"> • weakest 	<ul style="list-style-type: none"> • medium strength 	<ul style="list-style-type: none"> • strongest
Other Information	<ul style="list-style-type: none"> • Increase in strength as molar mass increases (more electrons). 	<ul style="list-style-type: none"> • Stronger when molecules are closer together 	<ul style="list-style-type: none"> • Not chemical bonding.

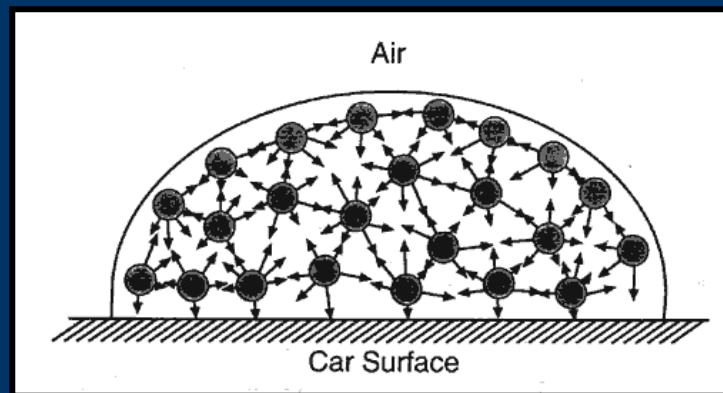
A. Liquids vs. Solids

	LIQUIDS	SOLIDS
IMF Strength	Stronger than in gases	Very strong
Fluid	Y	N
Density	high	high
Compressible	N	N
Diffusion	slower than in gases	extremely slow

B. Liquid Properties

◆ Surface Tension

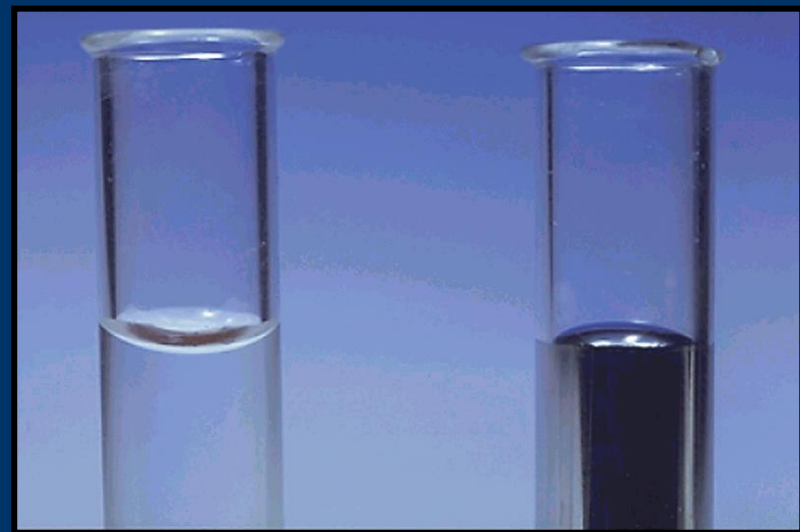
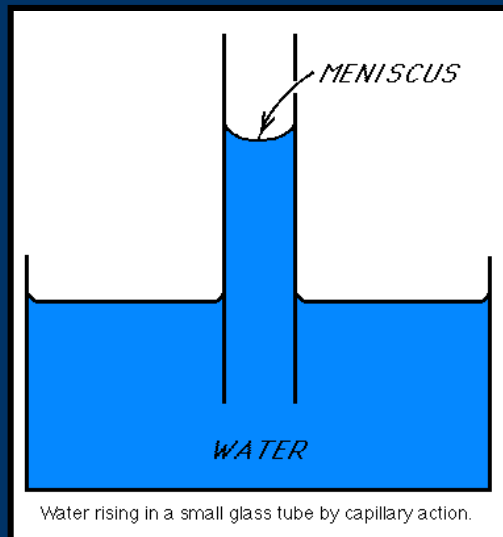
- attractive force between particles in a liquid that minimizes surface area



B. Liquid Properties

◆ Capillary Action

- attractive force between the surface of a liquid and the surface of a solid



water

mercury

C. Types of Solids



◆ Crystalline - repeating geometric pattern

- covalent network
- metallic
- ionic
- covalent molecular



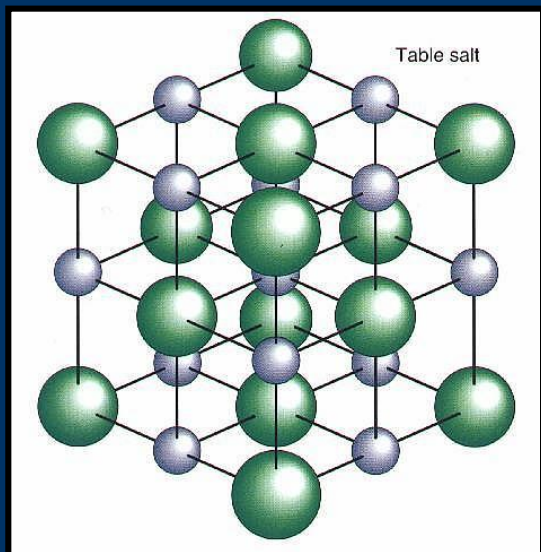
decreasing
m.p.

◆ Amorphous - no geometric pattern

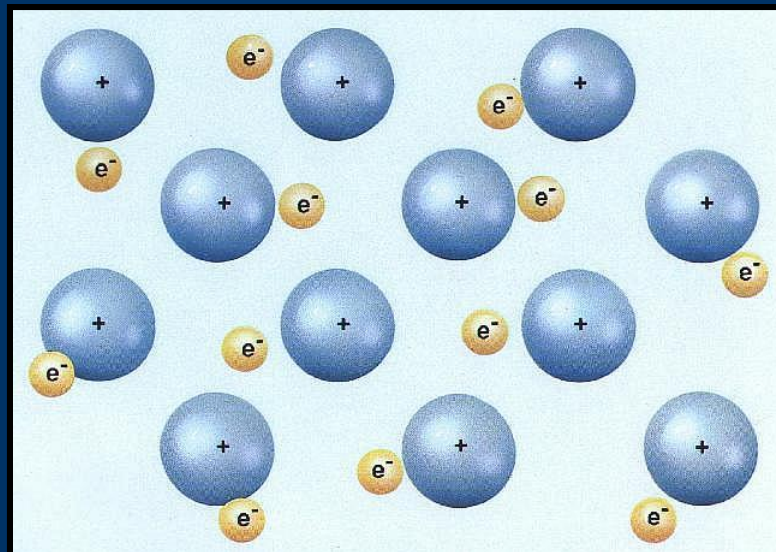
C. Types of Solids



Read pages 340-341 in the Blue Modern Chem. Book

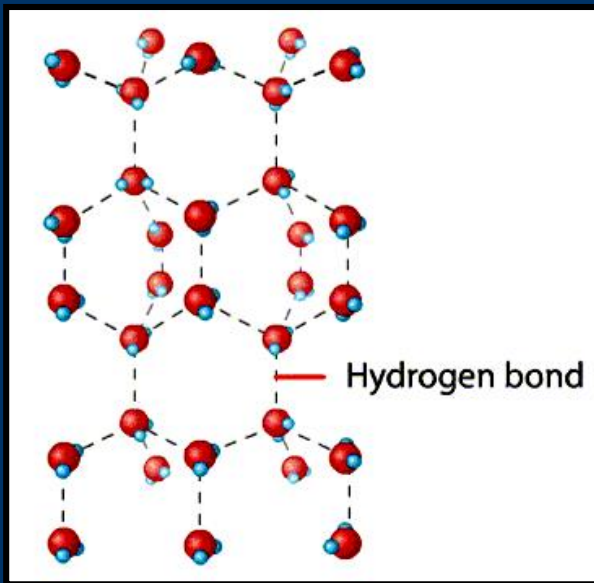


Ionic
(NaCl)

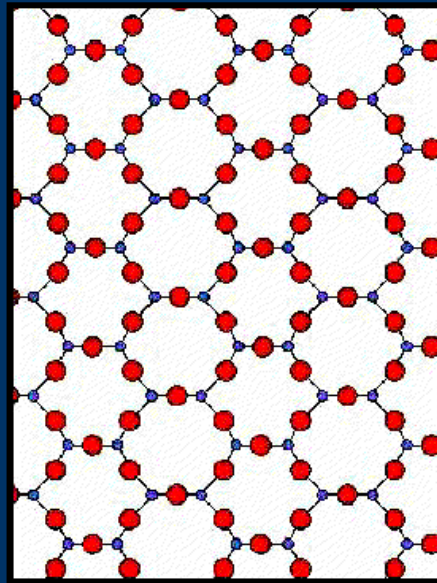


Metallic

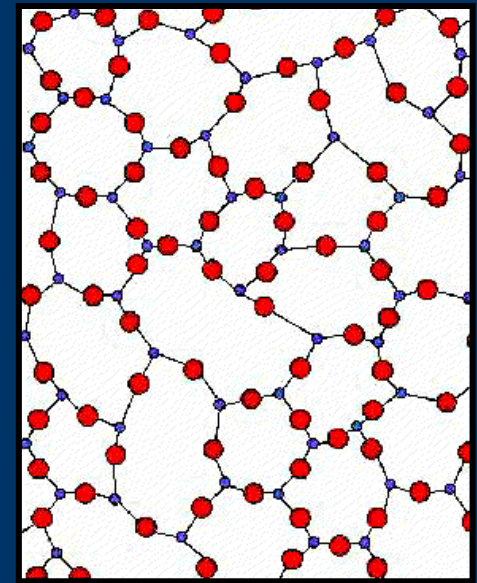
C. Types of Solids



Covalent
Molecular
(H_2O)



Covalent
Network
(SiO_2 - quartz)



Amorphous
(SiO_2 - glass)

Record the properties of each of these 5 types of solids in your notes