

CHAPTER 14 NOTES  
LIQUIDS & SOLIDS  
P. 456 – 493

SECTION 14 –1

	Gas	Liquid	Solid
Compressibility			
Density			
Shape			
Diffusion			
Expansion			
Volume			

How might an attractive force between particles affect the way particles in a solid, liquid, or gas react?

How would attractive forces result in the three states of matter?

Why are almost all liquids and gases at room temperature molecular substances?

What do ionic and metallic bonds have in common?

State two factors that cause a change of state.

Fill in the chart by comparing the strengths of the kinetic energy and attractive forces for each phase, using the terms low, medium, and high.

	Kinetic Energy	Attractive Forces
Solid		
Liquid		
Gases		

State the difference between intermolecular forces and intramolecular forces. Which kinds of bonds are stronger?

Describe the three types of intermolecular forces in order from weakest to strongest.

What is the difference between a temporary and a permanent dipole? Give an example of each.

### SECTION 14-2

How are the physical properties of liquids determined?

What is viscosity? What affects the viscosity of a substance?

Define surface tension.

Explain the relationship of viscosity and surface tension to intermolecular forces.

Describe the unusual properties of water. How do these properties relate to hydrogen bonding?

### SECTION 14-3

How do densities relate to the distance between particles?

How do the distances between particles compare in liquids and solids?

What is a crystalline solid?

What is a unit cell?

Differentiate between a hydrate and an anhydrous solid.

What is an amorphous solid and provide an example.

How do crystalline and amorphous properties compare to one another?

Type of Solid	Types of Particles	Forces Between Particles	Properties	Examples
Metallic				
Molecular				
Ionic				

Covalent-network				
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Why is copper a good conductor of electricity and diamond a poor one?

#### SECTION 14-4

What is a phase change and what does it involve?

Define the following:

Vaporization-

Condensation-

Evaporation-

Referring to figure 14-30 page 480, explain why gases have the largest amount of potential energy and why solids have the least.

Why is smoking not permitted at gas stations or at dry cleaners?

What is meant by dynamic equilibrium?

What is vapor pressure and how is it related to boiling and heat of vaporization?

Define the following:

Freezing point-

Heat of fusion-

Sublimation-

Deposition-

What is a heating curve and what kind of information does it provide?

What is a phase diagram and what kind of information does it provide?