

Chapter 2

1

2

| | Definite Shape | Definite Volume |
|--------------|----------------|-----------------|
| Solid | Yes | Yes |
| Liquid | No | Yes |
| Gas & Plasma | No | No |

p. 32

Solids

3

- Solid: Particles in solids have fixed, closely packed arrangement.
- Crystalline Solids: Solids that are made up of crystals: salt sugar, snow—molecules are in regular, repeating patterns
- Amorphous solids: molecules are not arranged in a regular pattern—glass, plastic, rubber

Liquids

4

- Its molecules are free to move—no definite shape, but does have definite volume

Fluids

5

- Gases and liquids

Surface Tension

6

- an inward force or pull among the molecules in a liquid
- brings the molecules on the surface closer together

Viscosity

7

- “a liquid’s resistance to flowing”.

Pressure

8

- = Force / Area
- Examples: Force of 30 Newtons, Area of 1 square meter
- Pressure = $30/1 = 30 \text{ N/m}^2$
- Resulting unit, if it's N/m^2 is in Pascals

Temperature

9

- The faster that molecules move:
 - a. the greater their energy is
 - b. the higher their temperature is

Points

10

- Melting point = freezing point
- Condensation point = vaporization point

Vaporization

11

- The change in state from liquid to gas
- Evaporation = vaporization when it happens only on the surface of a liquid—
- So, evaporation is a type of vaporization

Gas Laws

12

- When the temperature of a gas at a constant volume is increased, the pressure of the gas increased.
- When the temperature is decreased, the pressure of the gas decreases.
- This is called directly proportional, because when one goes up, the other goes ups.

Charles's law

13

- Temperature is directly proportional to pressure
- When the temperature goes up, the pressure goes up; when the temperature goes down the pressure goes down

Boyle's law

14

- When the pressure goes up, the volume goes down.
- When the pressure goes down, the volume goes up.
- This relationship is an inverse relationship, because when one goes up, the other goes down.

The Behavior of Gases

15

- When the temperature of a gas at a constant volume is increased, the pressure of the gas increases.
- When the temperature of a gas at constant pressure is increased, its volume increases.
- When the pressure of a gas at constant temperature is increased, the volume of the gas decreases.
