



The Nature of Liquids

Chapter 13 Study Guide-Part 2

Lesson Objectives

- ☐ Identify factors that determine physical properties of a liquid.
- ☐ Define evaporation in terms of kinetic energy.
- ☐ Describe the equilibrium between a liquid and its vapor.
- ☐ Identify the conditions under which boiling occurs.

Vocabulary: Drag and Drop

Boiling point

Condensation

evaporation

intermolecular attractions

liquid

normal boiling point

vaporization

vapor pressure

- _____ 1. A fluid with a fixed volume
- _____ 2. The forces between molecules
- _____ 3. The change of a gas or vapor directly to a liquid
- _____ 4. The boiling point of a liquid at a pressure of 101.3 kPa
- _____ 5. A measure of the pressure exerted by a gas above a liquid.
- _____ 6. The pressure exerted by the surroundings upon a liquid is equaled by the pressure exerted by the vapour of the liquid.
- _____ 7. The process of a liquid changing forms into a gas.
- _____ 8. the conversion of a liquid to its vapor below the boiling temperature of the liquid.

Questions: Short answer

9. Explain why evaporation leads to cooling of the liquid.

10. Describe what happens on a particle level when a liquid is at its boiling point.

11. Liquid A has a vapor pressure of 7.37 kPa at 40°C. Liquid B has a vapor pressure of 18.04 kPa at 40°C. Which liquid would evaporate faster at 40°C? Explain your answer.

True-False: Classify each statement as always true (AT); sometimes true (ST); or never true (NT).

_____ 12. The rates of evaporation and condensation are equal at equilibrium.

_____ 13. The change of a substance directly from a solid to a gas or vapor is called Condensation.

_____ 14. During evaporation in an open container, the temperature of a liquid decreases.

_____ 15. Heating a liquid will increase the temperature of a liquid.

_____ 16. When a liquid is in a closed container, there are more particles evaporating than condensing.

_____ 17. Particles in a liquid don't have enough kinetic energy to overcome the attractive forces between them and will vaporize.

Completion: Drop down menu. Choose the best response to each question.

Liquids are much (18) _____ than gases. Liquids and solids are known as (19) _____ states of matter. The conversion of a liquid to a gas or vapor is called (20) _____. When a liquid that is not (21) _____ changes to a gas, the process is called evaporation. A liquid evaporates faster when heated; however, evaporation itself is a (22) _____ process. When a partially filled container of liquid is sealed, some of the particles at the (23) _____ of the liquid vaporize. These particles collide with the walls of the container, producing a force called (24) _____. The vapor pressure of a liquid can be determined by a device called (25) _____. A liquid boils when its (26) _____ equals the external pressure. The normal boiling point of a liquid is the temperature at which the vapor pressure is equal to (27) _____.