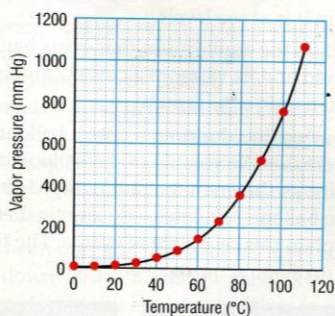


CONCEPT PRACTICE

- What is meant by elastic collision? 10.1
- List the various units used to measure pressure, and identify the SI unit. 10.1
- Change 1656 kPa to atm. 10.1
- Convert 190 mm Hg to the following. 10.1
 - kilopascals
 - atmospheres of pressure
- How much pressure (in mm Hg) does a gas exert at 3.1 atm? 10.1
- Explain the relationship between the absolute temperature of a substance and the kinetic energy of its particles. 10.1
- How is the average kinetic energy of water molecules affected when you pour hot water from a kettle into cups at the same temperature as the water? 10.1
- What does the abbreviation STP represent? 10.1
- Express standard temperature in kelvins and standard pressure in kilopascals and in millimeters of mercury. 10.1
- What is significant about the temperature absolute zero? 10.1
- By what factor does the average kinetic energy of gas molecules in an aerosol container increase when the temperature is raised from 27 °C (300 K) to 627 °C (900 K)? 10.1
- A liquid is a condensed state of matter. Explain. 10.2
- Explain why liquids and gases differ 10.2
 - in physical state.
 - in compressibility.
- Compare the evaporation of a contained liquid with that of an uncontained liquid. 10.2
- Explain vapor pressure and dynamic equilibrium. 10.2
- Explain why increasing the temperature of a liquid increases its rate of evaporation. 10.2
- Would you expect an equilibrium vapor pressure to be reached above a liquid in an open container? Why? 10.2
- Describe the effect that increasing temperature has on the vapor pressure of a liquid. 10.2
- Distinguish between the boiling point and the normal boiling point of a liquid. 10.2

39. Use the graph to answer each question. 10.2



- What is the vapor pressure of water at 40 °C?
 - At what temperature is the vapor pressure of water 600 mm Hg?
 - What is the significance of the vapor pressure of water at 100 °C?
- Use Figure 10.11 to determine the temperature at which water will boil in an open vessel when the atmospheric pressure is 400 mm Hg. 10.2
 - At the top of Mount Everest, water boils at only 69 °C. Use Figure 10.11 to estimate the atmospheric pressure at the top of this mountain. 10.2
 - Explain how boiling is a cooling process. 10.2
 - Name at least one physical property that would permit you to distinguish a molecular solid from an ionic solid. 10.3
 - Describe what happens when a solid is heated to its melting point. 10.3
 - Molecular solids usually have lower melting points than ionic solids. Why? 10.3
 - When you remove the lid from a food container that has been left in a freezer for several months, you discover a large collection of ice crystals on the underside of the lid. Explain what has happened. 10.4
 - Any liquid stays at a constant temperature while it is boiling. Why? 10.4

CONCEPT MASTERY

- Describe evaporation, vapor pressure, and boiling point.
- Mount McKinley (6194 m) in Alaska is the tallest peak in North America. The atmospheric pressure at its peak is 330 mm Hg. Find the boiling point of water there. Use Figure 10.11.