

14.1

THE PROPERTIES OF GASES

Section Review

Objectives

- Explain why gases are easier to compress than solids or liquids are
- Describe the three factors that affect gas pressure

Vocabulary

- compressibility

Part A Completion

Use this completion exercise to check your understanding of the concepts and terms that are introduced in this section. Each blank can be completed with a term, short phrase, or number.

Gases are easily 1, or squeezed into a smaller volume **1.** _____
 because of the 2 between particles in a gas. The four variables **2.** _____
 used to describe a gas are pressure, (P), 3 (V), 4 (T), **3.** _____
 and number of 5 (n). **4.** _____

You can use 6 theory to predict and explain how gases **5.** _____
 will respond to a change in conditions. Doubling the amount of **6.** _____
 gas in a rigid container 7 the pressure. You can raise the **7.** _____
 pressure exerted by a contained gas by 8 its volume. As the **8.** _____
 temperature of an enclosed gas decreases, the pressure 9. **9.** _____

Part B True-False

Classify each of these statements as always true, AT; sometimes true, ST; or never true, NT.

- _____ **10.** According to kinetic theory, the volume of the particles in a gas is small compared to the total volume of the gas.
- _____ **11.** Air will rush into a sealed container when the container is opened.
- _____ **12.** Gas flows from a region of lower pressure to a region of higher pressure.
- _____ **13.** Adding air to an object will cause the object to inflate.
- _____ **14.** Four variables are used to describe a gas, P , V , T , and n , where n = number of moles.

Part C Matching

Match each description in Column B to the correct term in Column A.

Column A

Column B

- | | |
|---|--|
| <p>_____ 15. collisions of particles</p> <p>_____ 16. 10 times the diameter of a particle</p> <p>_____ 17. compressibility</p> <p>_____ 18. piston</p> <p>_____ 19. kilopascals</p> | <p>a. used to compress a gas in a cylinder</p> <p>b. the SI unit of pressure</p> <p>c. result in pressure exerted by a gas</p> <p>d. distance between particles in an enclosed gas at room temperature</p> <p>e. a measure of how much the volume of matter decreases under pressure</p> |
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Part D Questions and Problems

Answer the following in the space provided.

20. Explain each assumption of the kinetic theory of gases in your own words.
