

15.1 WATER AND ITS PROPERTIES

Section Review

Objectives

- Explain the high surface tension and low vapor pressure of water in terms of the structure of the water molecule and hydrogen bonding
- Describe the structure of ice

Vocabulary

- surface tension
- surfactant

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.

- Each O—H bond in a water molecule is highly 1. Oxygen 1. _____
 acquires a partial 2 charge, while hydrogen acquires a 2. _____
 partial 3 charge. Because the H—O—H bond angle is 105°, 3. _____
 the water molecule as a whole is 4. 4. _____
- Water molecules are attracted to each other by intermolecular 5. _____
5 bonds. This bonding accounts for many properties 6. _____
 of water, such as its 6 vapor pressure and 7 7. _____
 boiling point. Hydrogen bonding is also responsible for the high 8. _____
8 tension of water. Liquids tend to minimize their surface 9. _____
 area and form 9 droplets because of their surface tension. 10. _____
 The surface tension of water can be reduced by adding a 10. 11. _____
11 floats in liquid water. This is because it is less 12. _____
12 than water. Ice has a rigid open structure, which is also 13. _____
 due to 13.

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