

8.4

POLAR BONDS AND MOLECULES

Section Review

Objectives

- Describe how electronegativity values determine the charge distribution in a polar bond
- Describe what happens to polar molecules when placed between oppositely charged metal plates
- Distinguish intermolecular attractions from ionic bonds and from covalent bonds
- Identify the reason network solids have high melting points or decompose without melting

Vocabulary

- nonpolar covalent bond
- polar covalent bond
- polar bond
- polar molecule
- dipole
- van der Waals forces
- dipole interactions
- dispersion forces
- hydrogen bonds
- network solids

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.

When like atoms are joined by a covalent bond, the bonding electrons are shared 1, and the bond is 2. When the atoms in a bond are not the same, the bonding electrons are shared 3, and the bond is 4. The degree of polarity of a bond between any two atoms is determined by consulting a table of 5. The attractions between opposite poles of polar molecules are called 6. Another strong intermolecular attractive force is the 7, in which a hydrogen covalently bonded to a very 8 atom, such as 9, is also weakly bonded to an unshared electron pair of another electronegative atom.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____