

Covalent Bonding

1. What is a covalent bond?

2. When two nonmetallic atoms share electrons a _____ is formed.

3. Is the following true or false? Atoms of some elements can share three pairs of electrons.

4. What are molecular compounds composed of?

5. Circle the letter of each sentence that is true about molecular compounds.

- a. More heat is needed to separate their molecules than is needed to separate ions.
- b. They melt at much higher temperatures than do ionic compounds.
- c. They boil at much higher temperatures than do ionic compounds.
- d. Most are poor conductors of electricity when dissolved in water.

6. How do molecular compounds come to have a slight electrical charge?

7. In a(n) _____ covalent bond, electrons are share unequally.

8. How are electrons shared in a nonpolar covalent bond?

9. Is the following true or false? Water molecules are polar.

10. Why do polar and nonpolar molecules have different properties?

11. Why don't water and vegetable oil mix?

12. A double covalent bond is when two atoms share _____ pair (s) of electrons.

13. How do the melting points, boiling points and conductivity of molecular compounds compare to those of ionic compounds?

14. Hydrogen forms the simplest covalent compound. Draw an electron dot diagram that represents this molecule.

15. Is the following true or false? Both covalent compounds and ionic compounds form molecules.