

Chapter 4

Use with Section 2

REINFORCEMENT

● Ionic and Covalent Bonds

Correctly complete the following paragraphs using terms from the box below. Some terms may not be used, and some terms may be used more than once.

electrons	losing	positive
covalent	molecules	protons
gaining	negative	random
gains	neutral	regular
ionic	nonpolar	ions
loses	polar	sharing

Elements in Group 1 become more stable by 1. _____ an electron. These elements form 2. _____ ions because they have more 3. _____ than 4. _____. Chlorine readily 5. _____ an electron, forming a 6. _____ ion. The attraction between sodium ions and chlorine ions forms 7. _____ bonds. In sodium chloride, the ions are lined up in a 8. _____ pattern.

Unlike sodium and chlorine, some atoms become more stable by 9. _____ electrons, forming 10. _____ that are 11. _____ rather than charged 12. _____. The bonds in a molecule of oxygen are 13. _____ 14. _____ bonds, while the bonds in a molecule of water are 15. _____ 16. _____ bonds.

Next to each formula, write the number of atoms of each element found in one unit of the compound.

17. potassium iodide, KI _____
18. sodium sulfide, Na₂S _____
19. silicon dioxide, SiO₂ _____
20. carbonic acid, H₂CO₃ _____

The electron dot diagram for carbon tetrachloride is shown at the right.

21. Is carbon tetrachloride an ionic or a covalent compound?

22. Are the bonds between carbon and chlorine single, double, or triple bonds?

23. What is the chemical formula for carbon tetrachloride?

