

Physical Science: Lecture

Notes: Ch5 L1

Name _____
Date _____

Lesson 1: How Atoms Form Compounds

A. What is a compound?

1. A _____ is a pure substance that contains two or more elements.
2. A(n) _____ is an ingredient list for a compound that uses atomic symbols and subscripts.
3. A neutral particle that forms as a result of electron sharing is
a(n) _____.
4. Compounds have properties that are different from the _____ that compose them.
 - a. Table salt is formed when the elements _____ and _____ combine.
 - b. An **ionic bond** is an electrical attraction between _____ and _____ charged ions in an ionic compound.

B. Ionic Bonds and Ionic Compounds

1. An atom that is not neutral because it has gained or lost electrons is
a(n) _____.
2. The force that holds atoms together in a compound is called
a(n) _____.
3. A(n) _____ is an electrical attraction between positively and negatively charged ions in an ionic compound.
4. A(n) _____ compound is one in which two or more elements or compounds gain or lose electrons and form ionic bonds.
 - a. In an ionic compound, the _____ ion is usually a metal. The negative ion is a(n) _____.
 - b. If an ionic compound has only two different ions, it is called
a(n) _____.

- c. Metals like magnesium and calcium from Group 2 of the periodic table can form binary ionic compounds with elements from either Group _____ or Group _____.
- d. Many ionic compounds dissolve in water. Water with dissolved ionic compounds is a(n) _____ of electricity.
5. _____ are one method for using atomic symbols and dots representing electrons to help predict how compounds will form.
6. The number of electrons in an atom's outermost energy level is its _____.
7. The noble gases, elements from _____ of the periodic table, have eight valence electrons.
8. Some atoms become ions by gaining or losing electrons until they have the same filled _____ energy levels as noble gases.

C. Covalent Bonds—Sharing Electrons

1. A(n) _____ is a chemical bond formed when atoms share electrons.
2. All _____ are covalent compounds based on carbon atoms.
3. _____ compounds can be solids, liquids, or gases at room temperature.
4. Atoms that have _____ electrons can form compounds if they share electrons.
5. Carbon has _____ unpaired electrons, and can form four covalent bonds.
6. A(n) _____ consists of two pairs of electrons shared between the same two atoms. Double bonds are stronger than single bonds.
7. _____ are stronger than single or double bonds and share three pairs of electrons.