

Use with textbook pages 76-80.

Words to know about compounds

Vocabulary

atom	ionic lattice
chemical bonds	lose
compound	molecule
covalent compounds	negatively
electrons	neutrons
element	polyatomic ion
gain	positively
ion	protons
ionic compounds	

Use the terms in the vocabulary box to fill in the blanks. Each term may be used more than once. You will not need to use every term.

1. A pure substance that is made up of one type of atom is called a(n) _____.
2. A pure substance that is made up of two or more types of atoms that are joined together due to a chemical change is called a(n) _____.
3. Atoms in a molecule and ions in an ionic lattice are held together by _____.
4. Chemical bonds are formed when atoms gain or lose _____ or when they share _____.
5. When an atom loses electrons it becomes _____ charged.
When an atom gains electrons it becomes _____ charged.
6. Metals and non-metals may form _____.
7. The atoms in non-metals tend to _____ electrons.
8. A(n) _____ is a repeating pattern of positive and negative ions.
9. _____ form when non-metal atoms bond together by sharing their electrons.
10. A neutral particle that is made up of atoms that are joined together by covalent bonds is called a(n) _____.
11. A(n) _____ is an ion that is made up of two or more atoms that are held together with covalent bonds.

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True or false?

Read the statements given below. If the statement is true, write “T” on the line in front of the statement. If it is false, write “F” and rewrite the statement to make it true.

1. _____ An element is a pure substance made of more than one kind of compound.

2. _____ Compounds form through chemical bonds.

3. _____ In covalent compounds, atoms gain or lose electrons to form molecules.

4. _____ Water is a molecule formed by the sharing of electrons between the atoms of hydrogen and oxygen.

5. _____ Covalent compounds involve the sharing of electrons, while ionic compounds involve the transfer of electrons.

6. _____ Ions are formed when atoms lose or gain protons.

7. _____ An ionic lattice is a repeating pattern of positive and negative ions.

8. _____ A polyatomic ion is electrically neutral.

9. _____ Atoms are held together by covalent bonds in polyatomic ions.

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Comparing ionic and covalent compounds

Use the chart to help you compare ionic compounds and covalent compounds. On the left side, place the letters of the statements that are only true of ionic compounds. On the right side, place the letters of the statements that are only true of covalent compounds. In the middle, place the letters of the statements that are true of both compounds.

- A. atoms gain or lose electrons to form ions
- B. pure substance made up of two or more kinds of elements
- C. compound is made of a positive ion and a negative ion
- D. atoms join by sharing electrons
- E. atoms are joined to each other by chemical bonds
- F. exist as a solid in the form of an ionic lattice
- G. oppositely charged ions attract each other
- H. molecule made of uncharged atoms
- I. bond between atoms is due to electron transfer
- J. compound is made of a non-metal and a non-metal
- K. sodium chloride (NaCl) is an example
- L. water (H₂O) is an example

Ionic compound	Both	Covalent compound

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Compounds

Match each Term on the left with the best Descriptor on the right. Each Descriptor may be used only once.

Term	Descriptor
1. _____ molecule	A. pure substance made of one type of atom
2. _____ ionic lattice	B. atoms combine by gaining or losing electrons
3. _____ polyatomic ion	C. repeating pattern of positive and negative ions
4. _____ ionic compound	D. atoms combine by sharing electrons to form molecules
5. _____ covalent compound	E. neutral particle that is made up of atoms that are joined together by covalent bonds
	F. ion made up of two or more atoms that are held together with covalent bonds

Circle the letter of the best answer.

6. Atoms in non-metals tend to gain

- A. molecules
- B. ions
- C. atoms
- D. electrons

7. Which of the following can be formed when there is electron transfer between metals and non-metals?

- A. molecule
- B. element
- C. ionic bond
- D. covalent bond

8. Which of the following is formed due to the sharing of electrons between two non-metals?

I.	a molecule
II.	a covalent bond
III.	a covalent compound

- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II, and III

9. Water is a(n)

- A. element
- B. polyatomic ion
- C. ionic compound
- D. covalent compound

10. Sodium chloride is a(n)

- A. element
- B. polyatomic ion
- C. ionic compound
- D. covalent compound

11. Which of the following can be formed when a non-metal atom reacts with a non-metal atom?

- A. element
- B. polyatomic ion
- C. ionic compound
- D. covalent compound