

Stability In Bonding (p. 602 – 606)

I. Combined Elements

1. Define the term compound.

Compound – combination of different or like elements

Ex: Elemental Copper vs. Copper Sulfate

2. Elements in a compound can have properties quite different than their elemental forms.

Circle One :

True

False

p. 603 Top

II. Formulas

1. Define the term chemical formula.

Chemical Formula – identifies what elements a compound contains and the exact number of each element in a unit of that compound.

2. What do the letters in a chemical formula represent?

Elements in compound Ex: H = Hydrogen

What do the subscripts represent?

Ex: $C_6H_{12}O_6$
How many atoms of the element are in the compound

3. If a symbol does not have subscripts, then how many atoms are in the compound?

1 Ex: CO_2
Carbon = 1
Oxygen = 2

III. Atomic Stability

1. What holds atoms and molecules together?

Electric forces between oppositely charged electrons + protons

2. Which group of elements rarely forms compounds?

The Noble Gases

3. How many electrons are in the outer energy level for each group?

1 (1A)	2 (2A)	3 (3A)	14 (4A)
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
15 (5A)	16 (6A)	17 (7A)	18 (8A)
<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>

4. For hydrogen and helium, how many electrons make the outer energy level stable?

2 electrons (REALLY IMPORTANT TO KNOW THIS!!)

For all other elements, how many electrons make the outer energy level stable?

8 electrons (REALLY IMPORTANT TO KNOW THIS!!)

5. Why are the noble gases stable and rarely form compounds?

The outer energy level possesses 8 electrons

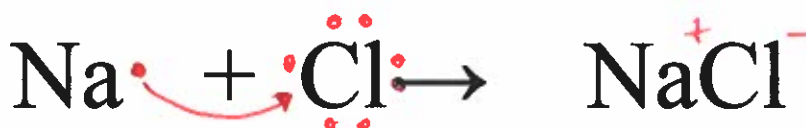
6. Hydrogen Helium is more stable when it is part of a compound.

Circle One : True False

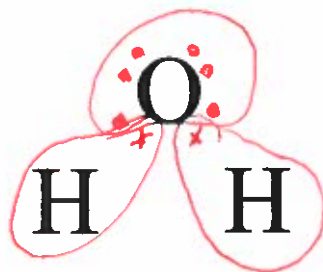
7. What can elements that are partially stable do to stabilize the outer energy level?

- Gain electrons Ionic Bonding
- Lose electrons
- Share electrons (Covalent Bonding)

8. Using electron dot diagrams, show how sodium and chlorine form sodium chloride.
(The illustration on p. 605 may be helpful.)



9. Using electron dot diagrams, show how two hydrogen and one oxygen atom form water.
(The illustration on p. 606 may be helpful.)



10. Define the term chemical bond.

Chemical Bond - force that holds atoms together in a compound