

Ionic Compounds

Chemical Bond

- A chemical bond _____
- Two types of chemical bonds
 - _____
 - _____

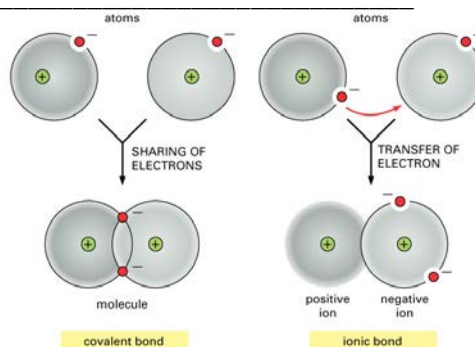


Figure 2.6 Essential Cell Biology, 2/e. © 2004 Garland Science

Why do atoms form bonds?

- Formed due to number of _____
- Why do valence electrons play such an important role?
 - Because elements react _____
 - How many electrons do atoms want in their outermost energy level? _____
- Electron Dot Structures: Show how many valence electrons in each atom
- Draw the Electron Dot Structures for the following atoms:

Li	Be	B	C	N	O	F	Ne
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The Octet Rule

- States that atoms _____
- How do we know if an atom will lose or gain electrons?
 - Atoms will do _____
 - Atoms with 1, 2 or 3 valence electrons will _____ electrons.
 - Atoms with 5, 6 or 7 valence electrons will _____ electrons.

How do atoms form bonds?

- One way is by the formation of _____.
- An ion is _____ (or a bonded group of atoms) with a _____ or _____.

Positive or Negative Ion?

- How can you tell if the ion formed will be positive or negative?
 - _____

Sodium Atom

How many protons? _____ Net Charge? _____

How many electrons? _____

Sodium Ion

How many protons? _____ Net Charge? _____

How many electrons? _____

Practice Questions

1. What types of atoms form positive ions? _____
2. What types of atoms form negative ions? _____
3. All alkali metals have a charge of _____.
4. All alkaline earth metals have a charge of _____.
5. All halogens have a charge of _____.
6. Group 6A elements have a charge of _____.

Transition Elements

- How many valence electrons do transition metals have? _____
- They will commonly lose those electrons to form ions with a _____ charge.
- But...they can also lose some of their d electrons to form ions of _____, _____ or greater.
- Use of Roman Numerals
 - _____
 - I = _____, II = _____, III = _____, IV = _____
 - We use Roman Numerals to _____
 - Copper (II) - _____ Iron (III) - _____

Name of Ions

- A positively charged ion is called a _____.
- A negatively charged ion is called a _____.
 - An anion's name has the ending _____ added to the root name.
 - What is the oxygen ion called? _____
 - What is the fluorine ion called? _____
 - What is the bromine ion called? _____

Practice Questions

1. Which type of atoms form cations? _____
2. Which type of atoms form anions? _____
3. Is Na^+ a cation or anion? _____
4. Is F^- a cation or anion? _____
5. Is Ca^{2+} a cation or anion? _____
6. Is Mg^{2+} a cation or anion? _____
7. What is the charge of the iodine ion? _____
8. What is the name of the iodine anion? _____
9. Would oxygen form a cation or anion? _____
10. What is the net charge of zinc (II)? _____

Monatomic vs. Polyatomic Ions

- Monatomic ions refer to ions _____.
 - Examples: _____
- Polyatomic ions refer to ions _____.
 - Examples: _____