

Section 3**Formation of Ionic and Molecular Compounds**

- Compounds are formed when elements combine in different chemical reactions. This identifies which elements combine and how many of them are present in the compound.
 - Chemical Name**
 - Atomic Mass Unit**
 - Atomic Number**
 - Chemical Formula**
- In the formula for baking soda [$\text{NaHCO}_3(\text{s})$] the following indicates how many atoms are present in each molecule ...
 - 1 sodium, 1 hydrogen, 3 carbon dioxide**
 - 1 atom of each element**
 - 1 sodium, 1 hydrogen, 1 carbon, 3 oxygen**
 - 1 sodium, 1 hydrogen, 1 calcium and 3 oxygen**
- In the formula for baking soda $\text{NaHCO}_3(\text{s})$ the (s) indicates that this molecule is ...
 - safe**
 - stable**
 - strong**
 - solid**
- Pure substances formed as a result of the attraction between charged particles of opposite charges are ...
 - Stable elements**
 - Ionic compounds**
 - Molecular compounds**
 - Charged elements**
- When ionic compounds are formed, the ions combine to form a ...
 - crystal**
 - block**
 - irregular pattern**
 - cloud**
- When sodium (a very reactive metal) is placed in chlorine (a green gas), the sodium explodes with a bright yellow flame. As it burns, this white, coarse-grained powder is produced.
 - silicon**
 - carbon**
 - alum**
 - salt**
- A group of ions ' *that act as one* ' are called ...
 - Subatomic ions**
 - Polyatomic ions**
 - Molecular ions**
 - Aqueous ions**
- When naming ionic compounds there are two rules to remember: The first is that the name of the metal is always placed first, the second is the name of the non-metal ion(s) changes to
 - 'ous'**
 - 'ade'**
 - 'ide'**
 - 'ate'**

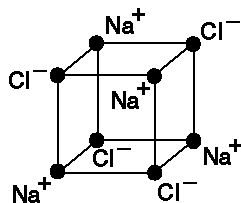
9. The ion charges of a particular element will help you determine the chemical formula for the compound that is formed. Calcium [Ca^{2+}] combines with chlorine [Cl^{-}] to produce Calcium Chloride. The correct formula for Calcium Chloride is ...

- A. Ca_2Cl
- B. CaCl_2
- C. 2CaCl
- D. Ca2Cl

10. The alkali metals include Lithium and Sodium, each having an ion charge of 1+, are often reactive with the elements that have an ion charge of 1-. The group of elements that alkali metals react with are called the ...

- A. Halogens
- B. Earth Metals
- C. Non-Metals
- D. Metalloids

11. This type of lattice structure represents the compound, **sodium chloride**.



The characteristic that identifies this compound as an ionic compound is its **distinct crystal** ...

- A. size
- B. shape
- C. ion
- D. element

12. N_2O_3 is a molecular compound. The chemical name - following the rules for naming molecular compounds - for N_2O_3 is ...

- A. trinitrogen oxide
- B. dinitrogen oxide
- C. trinitrogen dioxide
- D. dinitrogen trioxide

13. Sugar $\text{C}_{12}\text{H}_{22}\text{O}_{11}$ is a molecular compound. This compound contains ...

- A. 3 carbon atoms, 4 hydrogen atoms and 2 oxygen atoms
- B. 3 calcium atoms, 4 helium atoms and 2 organic atoms
- C. 12 carbon atoms, 22 hydrogen atoms and 11 oxygen atoms
- D. 12 calcium atoms, 22 helium atoms and 11 oxidizing atoms

14. Use the information in the following table to answer this question.

Compound	Formula	Melting Point °C	Boiling Point °C
baking soda	NaHCO_3	455°	1550°
carbon dioxide	CO_2	sublimates	-79°
rubbing alcohol	$\text{CO}_3\text{H}_8\text{O}$	-90°	82°
salt	NaCl	801°	1413°

The molecular compounds from the table above are ...

- A. baking soda and salt
- B. rubbing alcohol and salt
- C. carbon dioxide and baking soda
- D. carbon dioxide and rubbing alcohol

15. A Tetra Pak is a drink container that is used by manufacturers to provide juice in a handy convenient format. Tetra means ...

- A. recyclable
- B. four
- C. wax paper
- D. convenient