

Topic Introduction



Summarize your understanding of each paragraph.

In the earliest years of chemistry as a science, scientists had not yet settled on a consistent way to name elements and compounds. Many of the earliest names used are still used today. These are referred to as a “common name.”

In an ideal world, a system for naming would exist so that anyone familiar with the naming system could identify an element, a compound, or a formula. While the common names still are used, today there are several “rules” for naming compounds.

In addition to the “rules” for naming a compound – chemistry students must also memorize several names that do not follow those rules. The names for compounds that “break the rules” are often some of the most frequently cited compounds.

One straight-forward rule for naming “Type I” ionic compounds is to list the cation first – and the anion second. A good example of this is table salt. Table salt has the chemical formula of NaCl. The two ions for the compound are Na^+ and Cl^- . The name is sodium chloride.

Read/Summarize Text



1. Read the passage.
2. Underline key expressions in each sentence.
3. Re-write each word (or expression) you underlined.
4. Summarize the passage.

Rules for Naming Binary Ionic Compounds

1. The full name of the cation is listed first.
2. The root of the anion name is listed second and is followed by the suffix "ide."
3. If the compound contains a transition metal, a Roman numeral is included after the metal name to indicate the oxidation number of the metal.

Examples

NaCl – sodium chloride

BaF₂ – barium fluoride

NH₄OH – ammonium hydroxide

www.stetson.edu/~wgrubbs/genchem1/namingcompounds

Re-write words you underlined

Using a complete sentence, summarize or rephrase the passage

Read Text for Comprehension

Read this article for deeper understanding. No summary is required, although you may want to circle, underline, or mark key ideas and words.

Binary compounds are compounds that consist of two elements. There are three types of binary compounds. Binary compounds containing:



- two nonmetals (eg - CO)
- metals with fixed ionic charges (eg - AgCl)
- metals with variable ionic charges (eg - FeS)

In naming, each type of binary compound follows its set of rules.



Binary compounds containing two nonmetals

Rules for naming binary compounds containing two nonmetals:

1. Name the first element by its name.
2. The second element has the ending -ide.
3. The number of atoms of each element is indicated with Greek prefixes. In the case of mono-, it is only used for the second nonmetal. When no prefix appears, one atom is assumed.
4. If two vowels appear next to each other, the vowel from the Greek prefix is dropped. This is for ease of pronunciation.
 - monoxide becomes monoxide
 - tetraoxide becomes tetroxide
 - pentaoxide becomes pentoxide

Examples

| | |
|---------------------------------|----------------------|
| CO - | carbon monoxide |
| CO ₂ - | carbon dioxide |
| CCl ₄ - | carbon tetrachloride |
| SO ₂ - | sulfur dioxide |
| N ₂ O ₄ - | dinitrogen tetroxide |