Nomenclature of Inorganic compounds
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Introduction:
Nomenclature is naming compounds which are essential for writing formula and balancing chemical equations. It is the basic language of chemistry and can be defined as the terminology of chemical compounds. By knowing the names of chemicals and their formulas, you can predict the properties and reactions of the chemical. Life certainly becomes safer for everyone around, if students are able to read the formulas on the reagent bottles or laboratory stock solutions correctly. This is especially important when they have only the names or formulas on their lab sheet.

Before you can really start naming compounds you have to become familiar with the element names and abbreviations. You also need to memorize the charges associated with each element/ion. Some metals will have fixed charges (Type I metals) others will have variable charges (Type II metals). Naming rules differ slightly between these two types of metals.
Two other groups of compounds that don’t always follow clear rules are polyatomic ions and acids. There is no way to get around the memorization requirement. Some people find that using the periodic table and other patterns help them remember charges associated with certain ions.

To begin naming you need to answer the following questions:

1. Is it a binary compound? (There are certain rules for binary compounds, you are memorizing the names of anything more complex)
2. Does the compound contain a metal and a non-metal (or a polyatomic ion) or two nonmetals?
3. If it does contain a metal, does that metal have a fixed (Type I) or variable (Type II) charge?
4. Does it contain hydrogen? Is it an acid? There are two types of acids; binary and oxoacids.

And remember that molecules must have balanced charges in the ionic compounds and no charge on the covalent compounds.
Task:

There are different rules for naming ionic, covalent compounds and acids.

You are required to summarize the rules for naming:

1. Ionic compounds Type I and Type II
2. Ionic compounds and polyatomic ions
3. Covalent compounds, and Acids; binary and oxoacids

You can search for these rules in any text book or you can look it up in any of the following suggested web pages:
- educypedia.be/education/chemistryinorganic.htm
- nauticus.org/ccstuderresource.html
- Chemtutor.com
- en.wikipedia.org
- mikeblaber.org/oldwine/chm1045/notes/Atoms/Naming/Atoms06.htm
- files.chem.vt.edu/chem-ed/index.html

and any other you may find helpful.

In the lab, you will be given a handout that has a list of chemicals to name using the rules you have summarized. Make sure that you are ready, prepared and well organized before you go to the lab. Lab instructors will be collecting your answer sheets at the end of the lab.

Good Luck
Naming Inorganic compounds; Chart 1

No. Then Go to Chart 2.

- Is it binary compound?
  - Yes
    - Does it have a metal and a non-metal?
      - Yes
        - Is the metal Type I or Type II?
          - Type II
            - Determine the Charge of the Cation
              - Name Cation (Roman Numeral for metal Charge) then name anion
          - Type I
            - Name cation and then anion
      - No
        - Is it two non-metals?
          - Yes
            - Does it have hydrogen in aq solution?
              - Yes
                - Name as a binary acid
              - No
                - Two metals an Alloy
          - No
            - Name as binary covalent
- Chart 2.
Naming Inorganic compounds; Chart 2

Does it have a polyatomic ion?

- Yes
- No. Then Go to Chart 2.

Does it have Hydrogen in aq solution?

- Yes
  - Name as Oxo-acid
- No
  - Does it have a metal?
    - Yes
      - Is the metal Type I or Type II?
        - Type I
          - Name cation and then Polyatomic ion
        - Type II
          - Determine the Charge of the Cation

Name Cation (Roman Numeral for metal Charge) then polyatomic ion