

Background: So atoms make up everything in the world, but not everything in the world is elemental. There's a joke in there somewhere, I know it. Our work for the week to come will focus on the way atoms combine to make molecules or compounds. While there are only 118 kinds of atoms (not including isotopes) there are nearly limitless compounds that need names. To be fair, the vast majority of those are organic, people that name organic compounds are wizards. Not the exciting kind, just the kind that are mostly in the library. Bookish wizards.

Naming chemical compounds (nomenclature) is a relatively new concept. Prior to standardized naming conventions one substance could have several different names, and things were confusing. In naming compounds, the number one goal is specificity. A name should be very clear in describing the compound.

Luckily there are only a few kinds of things we attempt to name. Ionic compounds contain metals and nonmetals, and the goal of a name is to describe both them. Certain types of ionic compounds require a roman numeral to describe the oxidation state of the metal.

Molecular compounds tend to be comprised entirely of non-metals. There is a different naming convention for these compounds, which again gives people a very clear and unambiguous idea of the compound. A special subdivision of this is organic compounds, and their rules are extensive. Again, bookish wizards.

Finally, there are acids, which deviate a little from our previous rules. This comes from their chemical properties, more than their arrangement of atoms.

At the end of this week, you'll be able to read the back of a shampoo bottle with comfort and pride.

Objectives:

1. Name binary compounds containing metals and nonmetals.
2. Name compounds that contain polyatomic ions.
3. Name molecular compounds.
4. Given a name, write the compound. Given a compound, write the name.

Reading: Zumdahl Chapter 5