

Background: All chemical reactions are special in their own way. One kind of reaction, however, is a little more special than the others: aqueous reactions. This kind of reaction, while following all of the rules of chemical reactions, gives us some very interesting things to study. This kind of specialness is what our parents were talking about when they said they loved all their kids equally. Its mostly true.

So what is so special about aqueous reactions? These involve solutions, which are some amount of a molecule dissolved in a solvent like water. In those situations we aren't really talking about molecules anymore. We are now looking at ions that floating freely in solution. These positively and negatively charged species can disassociate and recombine to make new compounds. The most interesting of these no longer remain soluble in solution.

A good example of this would be lead. I think we'd all agree on a lead free drinking supply. Some places aren't so lucky. One way to remove lead from water is to add something that will react with the lead, creating an insoluble solid. Then the lead would part of a solid (precipitate) instead in the water.

Its like the old saying goes: If you aren't part of the solution, you're part of the precipitate.

We will explore this kind of reaction using aqueous solutions, redox pairs, as well as acids and bases. This will be fun, and it will be the most 'chemistry' you've seen yet!

Objectives:

1. Predict the type of reaction that takes place based on the substances being combined.
2. Write net ionic equations for reactions taking place in solution.
3. Identify the key components of an oxidation/reduction reaction.
4. Determine the products of an acid-base reaction.
5. Determine the products of decomposition reactions.

Reading: Zumdahl Chapter 6