

Colton Short

Lab 2.2

Ionic And Covalent Compounds

Research Questions:

How can we tell the difference between ionic and covalent compounds? How can we break the bonds of a compound?

Intro:

Ionic bonds form when electrons are permanently transferred from one atom to another. This kind of bond can only form between metals and nonmetals. Covalent bonds occur when electrons are shared between two atoms. This kind of bond can only happen between nonmetals. In the experiment we are determining if two different compounds are covalent or ionic.

Procedures:

First, we poured approximately 150mL of water into each of our two Beakers. Then we put 1 Rounded Spatula full of sugar into the first Beaker, making sure to mix thoroughly. Then we put 1 Rounded Spatula full of Baking Soda into the second Beaker, making sure to mix thoroughly. We then attached the leads onto the supplied 9 Volt Battery. Next, we put the Leads into the water with the sugar. Finally, we put the leads into the water with the Baking Soda.

Observations:

Nothing happened when the leads were put into the beaker with the sugar water, but when they were put into water with Baking Soda, they bubbled. Eventually the water turned blue, and the positive (Red) lead oxidized, also turning blue.

Conclusion:

Ionic Compounds conduct electricity. Covalent Compounds do not. You can test if something is ionic or covalent using an electric current. Baking soda is ionic, sugar is not. When an electric current is run through the water, electrolysis occurs, breaking apart the atoms in the water. This is what caused the water and the lead to turn blue.

Vocabulary:

A compound is a material formed by chemically bonding two or more elements.

A chemical reaction is a process that involves rearrangement of the molecular or ionic structure of a substance, as opposed to a change in physical form.

Ionic compounds are compounds formed between metals and nonmetals.

Covalent compounds are compounds formed only between nonmetals.

Electrolysis is the process of using electricity to split water into hydrogen and oxygen.

In chemistry, a solution is a special type of homogeneous mixture composed of two or more substances.