

Aiden White

2nd Period Chemistry

11/15/2023

Experiment 5.2

Research Question:

What behaviors do ionic and covalent compounds exhibit when they are combined as a mixture?

Introduction:

Ionic compounds are formed when atoms steal electrons from each other, while covalent compounds are made from the sharing of electrons. In ionic compounds, there are both polar and non-polar compounds. Sometimes in the bonding process, the atoms involved gain or lose electrons, causing them to have a charge.

Procedure:

Same as in book

Results:

When we poured the salt into the water, the salt dropped straight to the bottom of the beaker. When we put salt in the oil, some of the salt dropped to the bottom of the glass and some stuck to the side of the beaker. When we stirred the water, all of the salt disappeared, leaving the water mostly clear. When we stirred the salt in with the oil, some was stuck to the wall, and the salt had broken down some, but you could still see it in the water.

Conclusion:

When we mixed the salt with the water, the slight positive charge of the water broke down the salt into individual molecules, making them disappear from sight. When we mixed the oil and the salt, the oil had no charge, so it didn't break down the salt, resulting in what looked like oil with small bubbles in it. The salt dissolved in the water because salt is an ionic compound. The chemical makeup of salt is NaCl. Sodium, (Na) has a positive charge and chlorine (Cl) has a negative charge. The different charges in the molecule make them attract to other things that have charges, like water. So, when ionic and covalent compounds mix, they dissolve into each other, while sometimes they don't. It all depends on if the covalent compound is polar or non-polar.

An ionic compound is a compound that is formed when electrons are taken from another atom, while covalent compounds are made when electrons are shared between two or more atoms. A polar covalent compound is a compound that has either gained or lost electrons during the bonding process, giving them a slight charge. A purely covalent or non-polar compound is a compound whose charge is completely neutral. A mixture is where you mix two compounds together without them chemically bonding together. If something is immiscible, it means that it is unable to mix. For example, salt and oil are immiscible because they wouldn't combine when we tried to mix them, while suspension means that a solid and would dissolve and spread evenly in a liquid.

Pictures for Results:

