

Taylor Thompson

Mrs. Parker

Chemistry

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Chem lab 5.2

Research Question:

What behavior do ionic and covalent compounds show when combined as a mixture?

Introduction:

Ionic compounds and covalent compounds form in different ways depending on the situations. There are four different types of ionic compounds while about half of that of covalent compounds.

Procedures:

Procedures are listed in the book.

Observations:

Oil has more visible bubbles and takes longer to settle because of how thick it is. Water on the other hand had smaller bubbles that disappeared more quickly. Water also dissolved the salt while oil did not.

Conclusions:

Salt is ionic, its formula is NaCl. Na is the metal, sodium, and Cl, chlorine, is the nonmetal. Water is polar covalent. Both compounds are held together by positive negative charges and they will be attracted to each other. Water separates the salt molecules, you see it as being dissolved.

Oil is nonpolar covalent. It has NO charge. So, it's not attracted by charges to ionic or covalent compounds. Thus it did not dissolve the salt. This experiment demonstrates the "like dissolves like" principle.

1. Polar covalent compounds and ionic compounds are compatible.
2. Polar covalent compounds and ionic compounds are compatible.
3. Nonpolar and nonpolar are compatible.
4. Nonpolar is NOT compatible with polar or ionic.

Vocabulary:

1. Ionic compound: the compounds formed by the transfer of electrons between metals and nonmetals.
2. Covalent compound: A molecule formed by covalent bonds, in which atoms share one or more pairs of valence electrons.
3. Polar covalent compound: a bond that exists between two atoms consisting of electrons that are unevenly distributed.
4. Nonpolar covalent compound: A type of bond that forms when two atoms share a pair of electrons with each other.
5. Immiscible: Inable of being mixed.
6. Mixture: An aggregate of two or more substances that are not chemically united and that exist in no fixed proportion to each other.
7. Suspension: The state in which the particles of a substance are mixed with a fluid but are undissolved.