

## Experiment 2.2

**Research Question:** How can we experimentally determine the difference between ionic and covalent compounds?

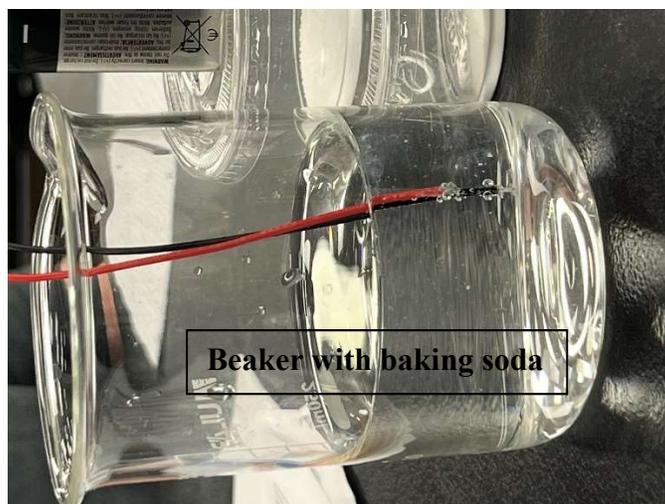
**Introduction:** Ionic compounds conduct electricity and covalent do not. Ionic compounds have high polarity while covalent compounds do not. Compounds which are covalent melt at a low temperature whereas ionic compounds melt at high temperatures.

**Procedures:** First we poured approximately 100-150mL of distilled water into each beaker. Then we mixed 1 spatula of baking soda into a beaker and using the other spatula scooped some sugar into the other beaker. Third we prepared the battery with the lead attachment. Next we inserted the leads into the sugar H<sub>2</sub>O and observed and recorded. Fifth we inserted the leads into the baking soda H<sub>2</sub>O and observed and recorded.

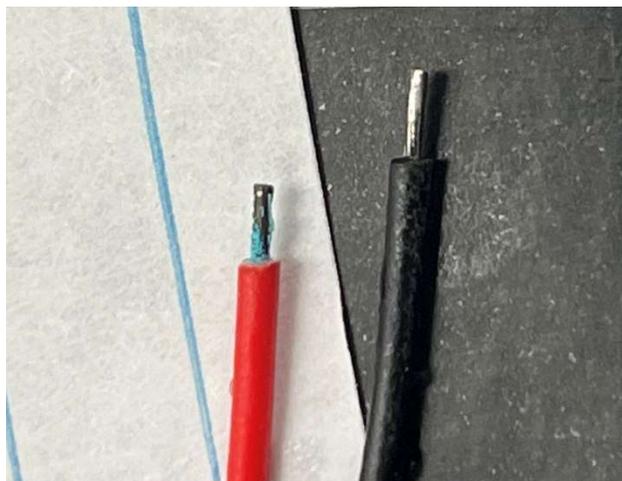
**Results:** When we inserted the leads into the sugar nothing happened.



When we inserted the leads into the baking soda bubbles formed on both the positive and negative leads.



After removing the leads we observed that the positive lead was oxidized.



**Conclusion:** The positive terminal oxidized in baking soda because they are ionic and conduct electricity. Baking soda is ionic and sugar is covalent. We were able to experimentally determine which solution was ionic and covalent by seeing the oxidization form on the positive lead in an ionic compound.

1. Compound: A substance that can be decomposed into elements by chemical means.
2. Chemical Reaction: A process by which one or more substances change into one or more different substances.
3. Ionic Compound: A compound formed by ions.
4. Covalent Compound: A compound formed by atoms that share electrons.
5. Electrolysis: chemical decomposition produced by passing an electric current through a liquid or solution containing ions.
6. Mixture: A substance that contains different compounds and/or elements.
7. Solution: The result of one or more solutes being dissolved in a solvent.