

Name _____

The Magical World of Ionic Compounds: Exploring the Properties of Salts

Open-Ended Response Answer Key

1. Ionic compounds differ from covalent compounds because they are formed through the transfer of electrons, creating charged ions. This gives them unique properties such as high melting points, electrical conductivity when dissolved, and the ability to form colorful compounds.
2. To separate sodium (Na^+) and chloride (Cl^-) ions from table salt (NaCl), you can dissolve the salt in water to obtain a solution. Then, you can use a process called electrolysis to split the ions and collect pure sodium and chloride separately.
3. Understanding the properties of ionic compounds is crucial in chemistry for studying chemical reactions, in biology for understanding cellular processes, and in industry for applications like metallurgy, water purification, and electronics.
4. An example of the use of ionic compound conductivity is in the production of electrolytes for batteries. Ionic compounds, when dissolved in an electrolyte solution, allow the flow of electric current within the battery, powering various devices from smartphones to electric cars.

