

Name _____

Charged Up Chemistry: Exploring Ions and Ionic Compounds

Short Answer Key

1. An example of a cation is a sodium ion (Na^+). It forms when a sodium atom loses one electron, resulting in a positive charge due to an unequal number of protons and electrons.
2. An example of an anion is a chloride ion (Cl^-). It forms when a chlorine atom gains one electron, resulting in a negative charge due to an unequal number of protons and electrons.
3. When table salt (sodium chloride, NaCl) dissolves in water, the ionic bond between sodium (Na^+) and chloride (Cl^-) ions is broken. The water molecules surround and separate the ions, allowing them to move freely in the solution. This results in a clear, salty solution.
4. Ions contribute to the conductivity of an ionic compound by allowing the flow of electric current when the compound is dissolved in water. The mobility of the charged ions enables them to carry electrical charge through the solution, making it conductive.
5. One common ionic compound is calcium chloride (CaCl_2), which is used for melting ice on roads during winter to prevent accidents and maintain safe driving conditions.

