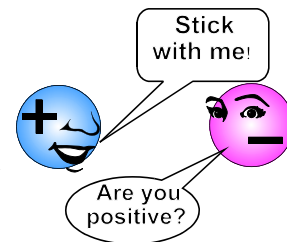


Ionic Bonds

Ionic bonds are caused by the attraction between oppositely charged ions. Ions form as follows: The electrons of one atom are attracted to the protons of another. Metals hold onto electrons loosely while nonmetals hold onto electrons tightly. As a result, metals lose electrons and nonmetals gain electrons in such a way that they complete their outer shells. Atoms that gain or lose electrons become electrically charged. Metals become positively charged ions by losing electrons. Nonmetals become negatively charged ions by gaining electrons. Metal cations and nonmetal anions become ionically bonded because they are oppositely charged.



ION TALK

Answer the questions below based on your understanding of ionic bonds.

1. Draw Bohr-Rutherford diagrams of sodium and chlorine atoms showing the number of protons and neutrons, and the arrangement of electrons.
2. What will happen to sodium and chlorine when they combine (*HINT: Remember how metals and nonmetals combine.*) _____
3. Draw Bohr-Rutherford diagrams of sodium and chlorine atoms showing the changes in the arrangement of electrons after they combine.
4. What are the charges on the sodium ion and the chloride ion after they combine? (*HINT: Count the number of protons and electrons of each.*) _____
5. What are the oxidation states of sodium and chlorine? _____
6. Why do sodium and chlorine become bonded? _____

7. What is the total charge on a compound of sodium and chlorine? _____