

Episode 8 - Chemical Bonds

1. What is special about the arrangement of electrons in the noble gases?
2. What do other elements do to acquire a noble gas configuration?
3. What are the indications of chemical change when sodium and chlorine react?
4. Describe the arrangement of ions in sodium chloride.
5. What tests were done to determine if a substance contains ionic bonds?
6. What does the shape of a crystal tell you about its internal structure?
7. What is meant by covalent bonding?
8. What element is common to many explosives?
9. Why do these explosives release so much energy?
10. What is meant by nitrogen fixation?

Answer Key

1. What is special about the arrangement of electrons in the noble gases?

They all have their s and p orbitals filled.

2. What do other elements do to acquire a noble gas configuration?

By gaining or losing electrons

3. What are the indications of chemical change when sodium and chlorine react?

Change in color and the release of energy

4. Describe the arrangement of ions in sodium chloride.

Each ion is surrounded by six of the other ions.

5. What tests were done to determine if a substance contains ionic bonds?

Electrical conductivity

6. What does the shape of a crystal tell you about its internal structure?

The shape of the crystal is often an indication of the internal arrangement of atoms.

7. What is meant by covalent bonding?

The sharing of electrons

8. What element is common to many explosives?

Nitrogen

9. Why do these explosives release so much energy?

In addition to the energy released, the products are often gases which expand rapidly as they form.

10. What is meant by nitrogen fixation?

The ability of plants to take nitrogen directly from the air.