

Chemical Compounds

Chapter 15 – 1

Ionic and Covalent
Compounds



Essential Question

- What are the properties of ionic and covalent compounds?



Definitions

- Chemical bond – combining atoms to form molecules or compounds
- Ionic compounds – compound made of oppositely charged ions
- Covalent compounds – chemical compound formed by sharing electrons



Ionic Compounds

- When atoms give or take electrons from another atom
- Formed by a reaction of a metal with a nonmetal
- Metal atoms become positively charged by giving away electrons
- Nonmetals become negatively charged by accepting electrons



Properties of Ionic Compounds

- Brittleness – ionic compounds are solid at room temperature; form a crystal lattice; break when hit
- High melting and boiling point
- Solubility & conductivity – dissolve easily in water; conducts electricity when dissolved, but not when in solid state



Covalent Compounds

- The prefix “co” means to share.
Ex: co-teach, cohabit, cooperate
- Formed when atoms shares electrons
- Covalent bonds are weaker than ionic bonds



Properties of Covalent Compounds

- Low solubility – do not dissolve well in water; ex: olive oil and water
- Low melting points – less heat is needed to separate covalent bonds, so melting & boiling points are low
- Electrical conductivity – most covalent compounds do not dissolve in water, but some do; some conduct electricity, some do not

