

GENERAL CHEMISTRY

STANDARD 5.3

5.3: Determine whether a given chemical is an ionic, covalent, or metallic compound

DEFINITIONS

- **Polyatomic Ion:** A group of elements bonded together that acts like an individual ion
 - Could be positive or negative
 - Only one positive Polyatomic Ion: Ammonium Ion NH_4^+
- Types of Compounds
 - Metallic Compound: A mixture of two or more metals
 - Also called an **alloy**
 - Alloys are usually created to give greater strength or resistance to corrosion
 - Ionic Compound: Metallic ion bonded to nonmetallic ion
 - Cation + Anion
 - Covalent Compound: Nonmetallic ion bonded to nonmetallic ion
 - Anion + Anion

EXAMPLES

- Determine whether the following compounds are ionic, covalent, or metallic:
 - CuCl_2
 - NH_3
 - Stainless Steel
 - N_2O
 - $\text{Mg}(\text{OH})_2$
 - NaCl
 - Cl_2
 - Bronze

EXAMPLES

- Determine whether the following compounds are ionic, covalent, or metallic:
 - CuCl_2 **Ionic**
 - NH_3 **Covalent**
 - Stainless Steel **Metallic**
 - N_2O **Covalent**
 - $\text{Mg}(\text{OH})_2$ **Ionic**
 - NaCl **Ionic**
 - Cl_2 **Covalent**
 - Bronze **Metallic**