

Hydrogen H^{+1}	Sodium Na^{+1}	Lithium Li^{+1}	Copper (I) Cu^{+1}	Potassium K^{+1}
Silver Ag^{+1}	Barium Ba^{+2}	Calcium Ca^{+2}	Copper (II) Cu^{+2}	Iron (II) Fe^{+2}
Magnesium Mg^{+2}	Zinc Zn^{+2}	Aluminum Al^{+3}	Chromium Cr^{+3}	Iron (III) Fe^{+3}
Aluminum Al^{+3}	Hydrogen H^{+1}	Sodium Na^{+1}	Sodium Na^{+1}	Lithium Li^{+1}

Lithium Li^{+1}	Copper (I) Cu^{+1}	Copper (I) Cu^{+1}	Potassium K^{+1}	Potassium K^{+1}
Silver Ag^{+1}	Silver Ag^{+1}	Barium Ba^{+2}	Barium Ba^{+2}	Calcium Ca^{+2}
Calcium Ca^{+2}	Copper (II) Cu^{+2}	Copper (II) Cu^{+2}	Iron (II) Fe^{+2}	Iron (II) Fe^{+2}
Magnesium Mg^{+2}	Magnesium Mg^{+2}	Zinc Zn^{+2}	Zinc Zn^{+2}	Sulfur S^{-2}

				Chlorine Cl^{-1}
Chromium Cr^{+3}	Chromium Cr^{+3}	Iron (III) Fe^{+3}	Iron (III) Fe^{+3}	Chlorine Cl^{-1}
				Fluorine F^{-1}
Bromine Br^{-1}	Bromine Br^{-1}	Bromine Br^{-1}	Chlorine Cl^{-1}	Fluorine F^{-1}
Fluorine F^{-1}	Iodine I^{-1}	Iodine I^{-1}	Iodine I^{-1}	Oxygen O^{-2}
Oxygen O^{-2}	Oxygen O^{-2}	Sulfur S^{-2}	Sulfur S^{-2}	

		Phosphorous	Phosphorous
Nitrogen	Nitrogen	P^{-3}	P^{-3}
N^{-3}	N^{-3}		

Ammonium	Ammonium	Ammonium
NH_4^{+1}	NH_4^{+1}	NH_4^{+1}

Acetate	Acetate	Acetate
$\text{C}_2\text{H}_3\text{O}_2^{-1}$	$\text{C}_2\text{H}_3\text{O}_2^{-1}$	$\text{C}_2\text{H}_3\text{O}_2^{-1}$

Chlorate	Chlorate	Hydroxide
ClO_3^{-1}	ClO_3^{-1}	OH^{-1}

Nitrate	Nitrate	Nitrate
NO_3^{-1}	NO_3^{-1}	NO_3^{-1}

Carbonate



Carbonate



Carbonate



Sulfate



Sulfate



Sulfate



Chlorate



Phosphate



Hydroxide



Phosphate



Hydroxide



LAB ACTIVITY

Writing Formulas for Binary Compounds

Objectives: Students will be able to write chemical formulas for binary compounds.

Materials: Scissors

Procedure:

1. Cut out the shapes on the pages provided and throw out any scrap paper in the garbage can.
2. Copy the information on the shapes on to the tables below. The first ones have been done for you.

Oxidation Numbers of Some Elements		
+1	+2	+3
Hydrogen, H ⁺¹		
-1	-2	-3

Polyatomic Ions and Their Charges			
+1	-1	-2	-3
Ammonium, NH ₄ ⁺¹			

3. Use the rules for writing **binary compounds** to write formulas below.

Rules for Writing Formulas for Binary Compounds

Rules for Naming Binary Compounds

1. The metal (+oxidation#) is written first.	1. The metal (+oxidation#) is written first.
2. The nonmetal (-oxidation#) is written second.	2. The nonmetal (-oxidation#) is written second.
3. The sum of the oxidation must add to zero.	3. Write the first syllable of the nonmetal, then add "ide."

Potassium and Iodine

Calcium and Fluorine

Hydrogen and Sulfur

Copper (II) and Oxygen

4. Use the tables on the previous page to name the following binary compounds.



5. Use the tables on the previous page and the paper cards to write formulas for the following compounds. *These aren't binary compounds since they contain polyatomic ions.*

Ammonium and Oxygen

Silver and Nitrate

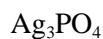
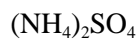
Sodium and Hydroxide

Copper (II) and Sulfate

Calcium and Acetate

Aluminum and Nitrate

6. Use the tables on the previous page and the paper cards to Name the following compounds. *These aren't binary compounds since they contain polyatomic ions. The rules are the same except that the polyatomic ions don't change their names.*



Questions:

1. What is special about binary compounds?_____

2. Why are compounds that contain polyatomic ions not binary compounds?
