**Polyatomic Ions**

Make the final chemical formula for the following elements:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Element (Cation)** | **Oxidation Number** | **Element (Anion)** | **Oxidation Number** | **Chemical Formula** |
| Potassium (K) | +1 | Chlorine (Cl) | -1 | KCl |
| Calcium (Ca) |  | Chlorine (Cl) |  |  |
| Sodium (Na) |  | Oxygen (O) |  |  |
| Aluminum (Al) |  | Phosphorus (P) |  |  |
| Lithium (Li) |  | Sulfur (S) |  |  |
| Aluminum (Al) |  | Oxygen (O) |  |  |
| Beryllium (Be) |  | Iodine (I) |  |  |
| Calcium (Ca) |  | Nitrogen (N) |  |  |
| Sodium (Na) |  | Bromine (Br) |  |  |

Polyatomic ions will bond the EXACT SAME WAY as binary ionic compounds. If you find that oxidation number of the polyatomic ion from the reference table (which you will always be given), you use the same neutralization method for the formula we used in binary ionic bonds.

**POLYATOMIC TABLE**

**POLYATOMIC ION CHARGE POLYATOMIC ION CHARGE**

Acetate (C2H3O2) -1 Ammonium (NH4) +1

Carbonate (CO3) -2 Chromate (CrO4) -2

Hydronium (H3O) +1 Hydroxide (OH) -1

Nitrate (NO3) -1 Phosphate (PO4) -3

Sulfate (SO4) -2 Sulfite (SO3) -2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  **(Cation)** | **Oxidation Number** |  **(Anion)** | **Oxidation Number** | **Chemical Formula** |
| Magnesium (Mg) | +2 | Phosphate (PO4) | 3- | Mg+2 (PO4)-3  Mg3(PO4)2 |
| Calcium (Ca) |  | Nitrate (NO3) |  |  |
| Ammonium (NH4) |  | Fluorine (F) |  |  |
| Aluminum (Al) |  | Sulfate (SO4) |  |  |
| Lithium (Li) |  | Hydroxide (OH) |  |  |
| Hydronium (H3O) |  | Nitrogen (N) |  |  |
| Beryllium (Be) |  | Carbonate (CO3) |  |  |
| Ammonium (NH4) |  | Carbonate (CO3) |  |  |
| Hydronium (H3O) |  | Phosphate (PO4) |  |  |

**Naming Polyatomics!**

Cation 1st, Anion 2nd.

**Never Change the name of a polyatomic**. If the anion is NOT polyatomic, end in -ide

**Formula Name**

1. Mg (OH)2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. K2 (CO3) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. (NH4) Cl \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. (H3O) (C2H3O2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. (NH4)2 S \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_