## Chem 1 Hour\_\_\_\_\_ Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Wexler/Steinhorst
Single Replacement Reactions Worksheet 2 (22pts)
Date:

**Activity of Metals Series**

|  |  |
| --- | --- |
| **Metal** | **Ion Formed** |
| Lithium: Li | Li+ |
| Potassium: K | K+ |
| Barium: Ba | Ba2+ |
| Calcium: Ca | Ca2+ |
| Sodium: Na | Na+ |
| Magnesium: Mg | Mg2+ |
| Aluminum: Al | Al3+ |
| Manganese: Mn | Mn2+ |
| Zinc: Zn | Zn2+ |
| Chromium: Cr | Cr3+ |
| Iron: Fe | Fe3+ |
| Cadmium: Cd | Cd2+ |
| Cobalt: Co | Co2+ |
| Nickel: Ni | Ni2+ |
| Tin: Sn | Sn2+ |
| Lead: Pb | Pb2+ |
| Hydrogen: H | 2H+ |
| Copper: Cu | Cu2+ |
| Silver: Ag | Ag+ |
| Mercury: Hg | Hg2+ |
| Platinum: Pt | Pt2+ |
| Gold: Au | Au3+ |

**Predicting Single Replacement Reactions**

Given the following reactant names, write out the names of the two products.

1. Lead (II) Chloride + Magnesium 🡪
2. Barium Nitrate + Zinc 🡪
3. Potassium + Tin (IV) Nitrate 🡪
4. Copper + Silver Nitrate 🡪

Predict the products using charge-balanced chemical formulas and then molar balance all of the following single replacement reactions. Determine if a reaction will occur (Go or No Go) based on the Activity Series table on the previous page.
 Go or No Go

1. \_\_\_Fe + \_\_\_CuCl2 **→**
2. \_\_\_Hg + \_\_\_Sn(SO4)2 **→**
3. Ba + Ni3(PO4)2 **→**
4. Pb + Au(NO3)3 **→**

**Converting Word Equations to Formulaic Equations**

*Write each of the following reactions as balanced chemical equations. Be sure to write the formulas of each compound correctly (they must be charge balanced using subscripts) before balancing the equations using coefficients.*

9. Silver metal is added to aqueous gold (III) chloride to form solid gold and silver (I) chloride.

10. Iron metal is added to aqueous copper (I) sulfate

11. Potassium metal is added to an aqueous solution of sodium phosphate.