

Polyatomic Parentheses Workshop

Scenario A: Crossing a Charge of "1" to the outside of a polyatomic ion

- | | |
|-------------------------|--------------------------|
| 1) Rubidium sulfate | RbSO_4 |
| 2) Lithium hydroxide | LiOH |
| 3) Silver (I) carbonate | Ag_2CO_3 |
| 4) Ammonium hydroxide | NH_4OH |
| 5) Copper (I) phosphate | Cu_3PO_4 |

Scenario B: Crossing a Charge of 2, 3, 4, etc. to the outside of a polyatomic ion

- | | |
|-----------------------------|------------------------------|
| 1) Titanium (IV) nitrate | $\text{Ti}(\text{NO}_3)_4$ |
| 2) Manganese (II) hydroxide | $\text{Mg}(\text{OH})_2$ |
| 3) ammonium phosphate | $(\text{NH}_4)_3\text{PO}_4$ |
| 4) Iron (III) sulfate | $\text{Fe}_2(\text{SO}_4)_3$ |
| 5) Aluminum hydroxide | $\text{Al}(\text{OH})_3$ |
| 6) Ruthenium (V) carbonate | $\text{Ru}_2(\text{CO}_3)_5$ |

Scenario C: Empirical formulas with polyatomic ions

- | | |
|---------------------------|----------------------------|
| 1) Lead (II) carbonate | PbCO_3 |
| 2) Nickel (III) phosphate | NiPO_4 |
| 3) Manganese (IV) sulfate | $\text{Mn}(\text{SO}_4)_2$ |

Scenario D: Determining the roman numeral for a transition metal when a polyatomic ion is present... or perhaps an empirical formula

- | | |
|---------------------------------|--|
| 1) $\text{Co}_2(\text{SO}_4)_3$ | Cobalt III sulfate |
| 2) $\text{Cr}(\text{OH})_2$ | chromium II hydroxide |
| 3) AgNO_3 | silver I nitrate |
| 4) Cu_3PO_4 | copper I phosphate |
| 5) AgOH | Silver I hydroxide |
| 6) $\text{Ni}(\text{OH})_3$ | nickel III hydroxide |
| 7) FeCO_3 | iron II carbonate *****challenge problem |

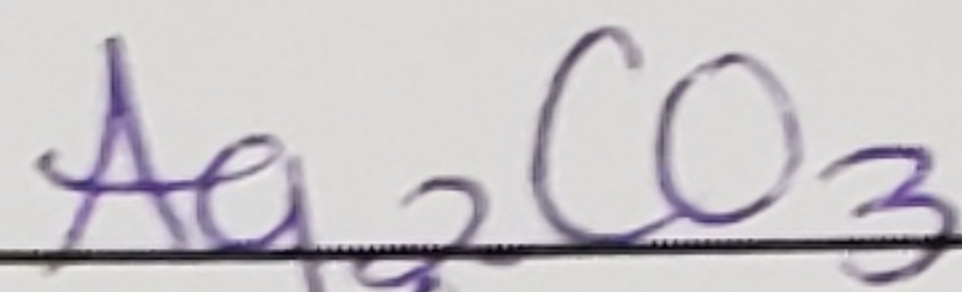
Transition Metals Workshop

When to NOT use a roman numeral: why???

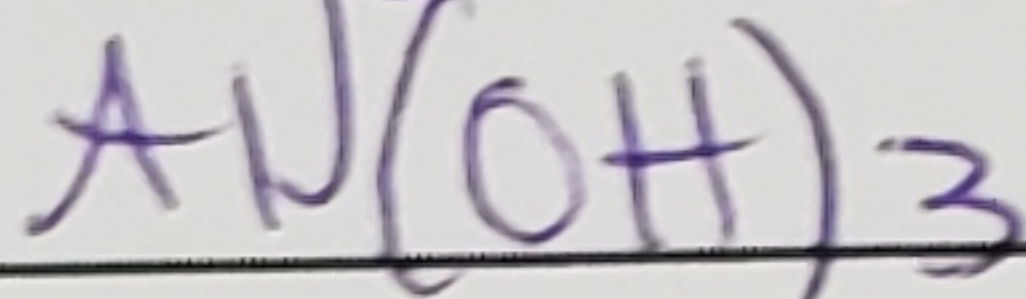
When you MUST use a roman numeral: why??

Write the formula:

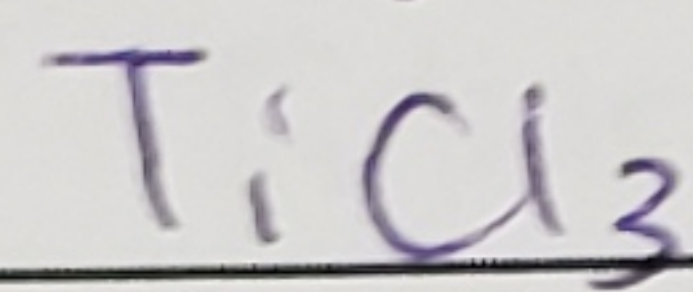
1) Silver (I) carbonate



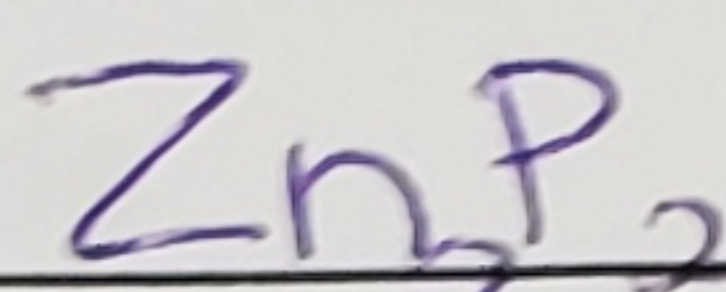
2) Aluminum hydroxide



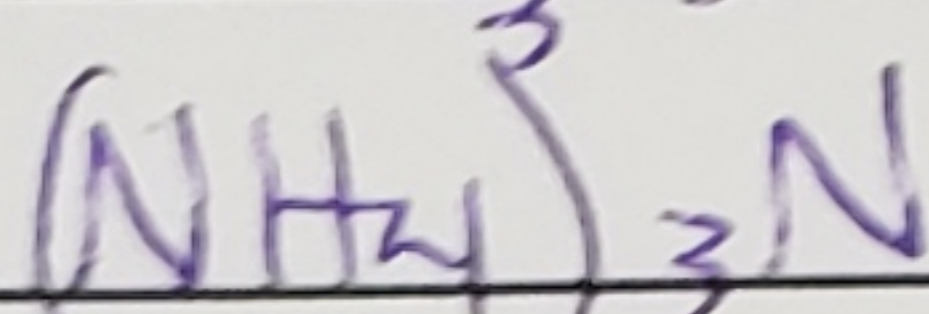
3) Titanium (III) chloride



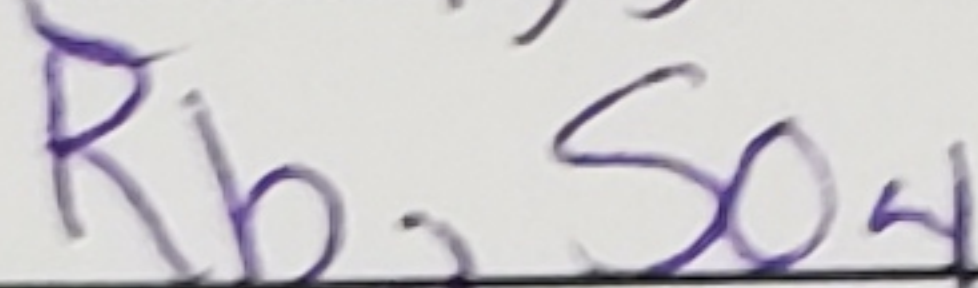
4) zinc (II) phosphide



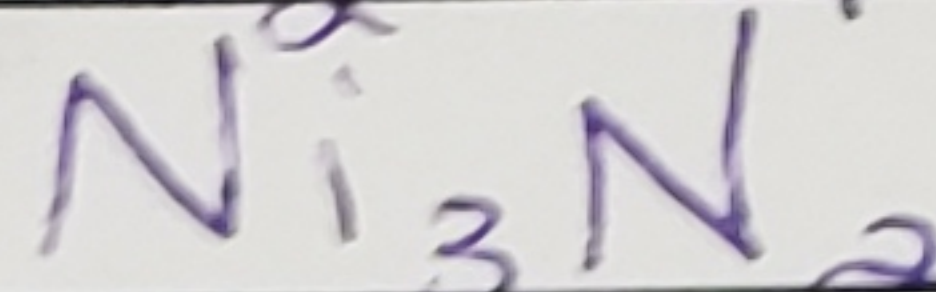
5) ammonium nitride



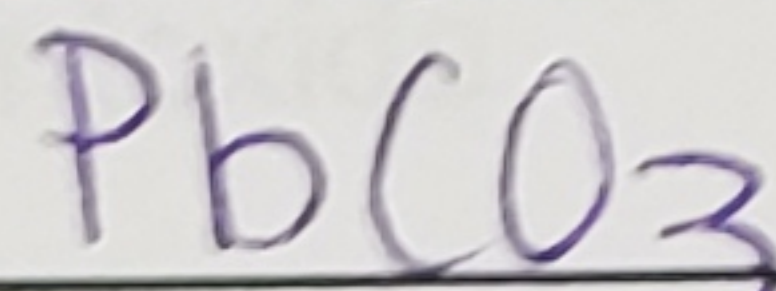
6) Rubidium sulfate



7) Nickel (II) nitride



8) Lead (II) carbonate



Write the name:

1) K_2CO_3

potassium carbonate

2) Cu_2O

copper I oxide

3) $\text{Ca}_3(\text{PO}_4)_2$

calcium phosphate

4) NH_4I

ammonium iodide

5) $\text{Sc}_2(\text{SO}_4)_3$

scandium III sulfate

6) $\text{Mn}(\text{NO}_3)_3$

manganese III nitrate

7) Al_2S_3

aluminum sulfide

8) Cr_2S_3

chromium III sulfide

Covalent Compounds Workshop

ALWAYS use prefixes (unless mono- on the first element). NEVER use charges. NEVER cross anything.

Write the name of the following:

1) BF_3 boron trifluoride

2) N_2O dinitrogen monoxide

3) N_2O_5 dinitrogen pentoxide

4) NO nitrogen monoxide

5) PBr_5 phosphorus pentabromide

6) P_4O_6 tetraphosphorus hexoxide

7) SeF_4 selenium tetrafluoride

8) P_2S_3 diphosphorus trisulfide

Write the formula of the following:

9) Nitrogen tribromide NBr_3

10) Tetraphosphorus decoxide P_4O_{10}

11) Sulfur tetrafluoride SF_4

12) Tellurium dibromide TeBr_2

13) Disilicon hexachloride Si_2Cl_6

14) Sulfur dioxide SO_2

15) Dinitrogen monosulfide N_2S

16) Iodine trichloride ICl_3

More Mixed Ionic and Covalent Compound Naming

Name 'em:

- 1) CaBr_2 calcium bromide
- 2) $(\text{NH}_4)_2\text{SO}_4$ ammonium sulfate
- 3) NO_2 nitrogen dioxide
- 4) ~~$\text{Pb}(\text{CO}_3)_2$ lead(IV) carbonate~~ Titanium III carbonate
- 5) N_2O dinitrogen monoxide
- 6) ZnF_2 zinc II fluoride
- 7) CCl_4 carbon tetrachloride
- 8) P_4O_6 tetraphosphorus pentoxide
- 9) $\text{Al}(\text{OH})_3$ aluminum hydroxide
- 10) K_2O potassium oxide

Formulas, please:

- 11) sulfur trioxide SO_3
- 12) tin(II) sulfide SnS
- 13) magnesium ~~acetate~~ ^{hydroxide} ~~$\text{Mg}(\text{C}_2\text{H}_3\text{O}_2)_2$~~ $\text{Mg}(\text{OH})_2$
- 14) phosphorus tetrachloride PCl_5
- 15) cadmium(II) chloride CdCl_2
- 16) iron(III) phosphate FePO_4
- 17) dinitrogen trioxide N_2O_3
- 18) calcium carbonate CaCO_3
- 19) vanadium(V) ~~bicarbonate~~ ^{phosphate} ~~$\text{V}_3(\text{BO}_3)_8$~~ $\text{V}_3(\text{PO}_4)_5$
- 20) carbon monoxide CO