

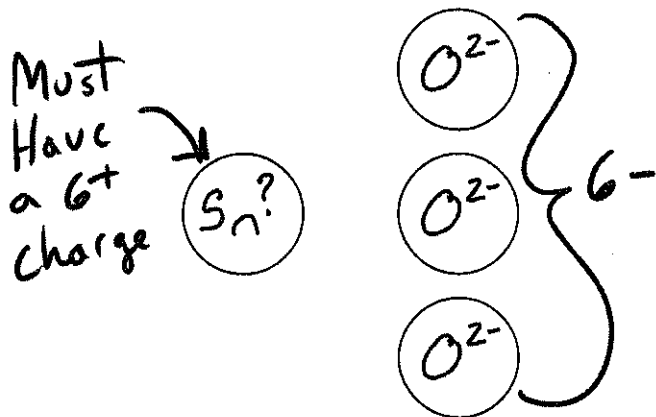
Variable Charge Cations

Notes:

- Some cations can have many charges, they are known as variable charge cations
- It is important to note the charge of the cation when naming the ionic compound

Ex: Tin (VI) Oxide....where VI is the charge on tin.

1. Draw SnO_3 instead as a picture of Atoms:



Total Charge on Oxygen = -6
Total Charge on Tin = +6
Individual Charge on Tin = +6

Name of Compound = **Tin (VI) Oxide**

2. Draw Au_3N as a picture of Atoms:

Name of Compound = _____

3. Draw Sn_2O_3 instead as a picture of Atom

Name of Compound = _____

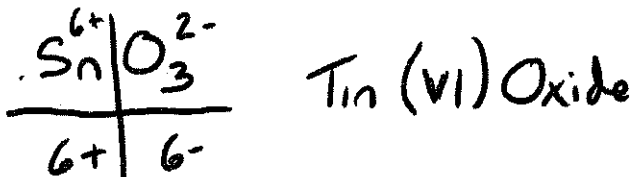
4. Draw Ag_1O_3 instead as a picture of Atom

Name of Compound = _____

5. What is the name of SnO_3 ?

Tin Oxide = Wrong Answer

Since tin has more than one charge, the charge needs to be determined so it can be included in the name.



The charge on tin was calculated to be +6, therefore the +6 is included in the naming of the compound. Once again, this is only done with metals with more than one charge.

6. What is the name of Sn_2O_3 ?

8. What is the name of Au_3N ?

7. What is the name of CuN ?

9. What is the name of CuNO_3 ?

Complete the Following Questions on Formula Units

10. What is the Formula Unit for Silver (III) Nitride _____

11. What is the Formula Unit for Vanadium (III) Chloride _____

12. What is the Formula Unit for Lead (IV) oxide _____

13. What is the Formula Unit for Silver (II) Nitride _____

14. What is the Formula Unit for Vanadium (II) Chloride _____

15. What is the Formula Unit for Lead (II) oxide _____

Write the formula for the variable charged binary ionic compounds:

1. Nickel (II) chloride _____
 2. Gold (III) oxide _____
 3. Cobalt (II) phosphide _____
 4. Copper (I) bromide _____
 5. Iron (III) chloride _____
 6. Copper (II) chloride _____
 7. Copper (I) bromide _____
 8. Cobalt (II) phosphide _____
 9. Manganese (III) bromide _____
 10. Iron (III) fluoride _____
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Name the variable charged compounds.....use I, II, III, IV

11. Pb Br_4 _____
12. $\text{Pb}_3 \text{N}_2$ _____
13. $\text{Cu}_2 \text{S}$ _____
14. Pb O_2 _____
15. Cu Br _____
16. Cu O _____
17. Ni O_2 _____
18. $\text{Cu}_2 \text{S}$ _____