

Naming

Ionic M/NM

Binary w/ Type A metals & Zn, Cd, Ag

1. Write the name of 1st element (metal) -cation
2. Change the ending of the 2nd element (nonmetal) -anion to "-ide"

Binary w/ Type B transition metals metals & Sn, Pb

Do the exact same thing as Type A, BUT look up the charge as a roman numeral.

- Examples:
1. Change the subscript.
 2. If the anion charge is correct, then just increase to find the metal charge.
 3. If the anion charge has been reduced (is incorrect) then multiply both subscripts by the number needed to correct the nonmetal charge and increase them.

Ternary w/ a Polyatomic Ion

Do the exact same thing as Type A, BUT look up the name of the polyatomic ion on the reference sheet.

Example:

If Type B metal don't forget (Roman Numerals) of metal's charge.

Note ammonium NH_4^+ is treated like a metal so it may come first in the compound.

Covalent NM/NM

Binary Covalent Compound

Use prefixes to represent the subscript # on both names.

1. Write the prefix and name of 1st nonmetal
2. Write the prefix and name of the 2nd nonmetal with the IDE ending

1 = mono
2 = di
3 = tri
4 = tetra
5 = penta
6 = hexa
7 = hepta
8 = octa
9 = nona
10 = deca

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CrPO_4	FeCl_3	MgSO_4	Cu	CuBr_2	FeCl_2	MgPO_4	CO	CuBr_2	FeSO_4	MgSO_4	CO
Al_2O_3	CuO	Cu(OH)_2	As_2O_3	Al_2O_3	CuO	Ca(OH)_2	K_2O_2	Al_2O_3	CuO	Ca(OH)_2	As_2O_3
Li^+	Cu_2N_2	HNO_3	SO_3	Li^+	Cu_2N_2	HNO_3	SO_3	Li^+	Cu_2N_2	HNO_3	SO_3
Cu_2N_2	Y_2O	NH_4Cl	NH_4	Cu_2N_2	Y_2O	NH_4Cl	NH_4	Cu_2N_2	Y_2O	NH_4Cl	NH_4
K_2S	BaS_2	$(\text{NH}_4)_2\text{CO}_3$	H_2O	K_2S	BaS_2	$(\text{NH}_4)_2\text{CO}_3$	H_2O	K_2S	BaS_2	$(\text{NH}_4)_2\text{CO}_3$	H_2O

Formula Writing

Ionic M/NM

Binary w/ Type A metals & Zn, Cd, Ag

1. Write the symbol & charge of the metal (cation).

2. Write the symbol & charge of the nonmetal (anion).

3. If the charges are the same, drop them. If not, symbols together.

4. If the charges are different, drop sign & cross the numbers to the bottom as subscripts.

5. Simplify the subscripts if needed.

Binary w/ Type B (transition metals) metals & Sn, Pb

1. Write the symbol & charge of the metal (cation) but drop it in the parenthesis.

2. Write the symbol & charge of the nonmetal (anion).

3. If the charges are the same, drop them. If not, bring symbols together.

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5. Simplify the subscripts if needed.

Binary w/ a Polytatomic Ion

1. Write the symbol & charge of the metal or nonmetal (cation) & anion.

2. Write the symbol & charge of the nonmetal or polyatomic ion-use net, drop.

3. If the charges are the same, drop them. If not, bring symbols together.

4. If the charges are different, drop sign & cross the numbers to the bottom as subscripts.

5. Simplify the subscripts if needed.

6. Remove parentheses if the subscript on the outside of it is 1 or you do not need them.

Covalent NM/NM

Covalent Compound

1. Write the symbol of the first nonmetal & use the prefix as its subscript.

2. Write the symbol of the second nonmetal & use the prefix as its subscript.

3. DO NOT SIMPLIFY!

1 - mono 6 - hexa
2 - di 7 - hepta
3 - tri 8 - octa
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Formula Writing

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Group 1: Common Salts and Oxides				Group 2: Acids and Bases				Group 3: Organic Compounds			
Examples:				Examples:				Examples:			
Calcium bromide	Iron(II)chloride	Magnesium sulfate	Carbon monoxide	Gold(III)nitride	Iron(III)sulfide	Magnesium oxide	Carbon monoxide	Gold(III)nitride	Iron(III)chloride	Magnesium sulfate	Carbon monoxide
Aluminum oxide	Copper(I) oxide	Cobalt(II) hydroxide	Dinitrogen trioxide	Aluminum oxide	Copper(I) oxide	Cobalt(II) hydroxide	Dinitrogen trioxide	Aluminum oxide	Copper(I) oxide	Cobalt(II) hydroxide	Dinitrogen trioxide
Lithium fluoride	Cobalt(II) nitride	Sodium nitrate	Sulfur hexoxide	Lithium fluoride	Cobalt(II) nitride	Sodium nitrate	Sulfur hexoxide	Lithium fluoride	Cobalt(II) nitride	Sodium nitrate	Sulfur hexoxide
Calcium nitride	Yttrium(II) oxide	Ammonium chloride	Dinitrogen trioxide	Calcium nitride	Yttrium(II) oxide	Ammonium chloride	Dinitrogen trioxide	Calcium nitride	Yttrium(II) oxide	Ammonium chloride	Dinitrogen trioxide
Phosphorus sulfide	Tin(IV) sulfide	Ammonium carbonate	Dihydrogen monoxide	Potassium sulfide	Iron(IV) sulfide	Ammonium carbonate	Dihydrogen monoxide	Potassium sulfide	Tin(IV) sulfide	Ammonium carbonate	Dihydrogen monoxide

Practice on your own using the U3 L9 CFU part TWO

You have already completed part ONE, now complete part TWO which is comprised of all naming and formula writing.

If you need the worksheet, click here:

https://docs.google.com/document/d/1TK-ts3_DMeSYDmvTr3ukJkN-lvMfpbTAqiRzxltDbFE/edit?usp=sharing

Part TWO: Mixed Review

Determine whether the substance is ionic type A (I -A) ionic type B (I -B) or covalent (molecular) (C). If Ionic, you will need to decide whether you need to put a roman numeral in the name and always check charges in the formula. If Covalent, no need to use roman numerals in the name and not need to check charges in the formula.

I/C		Provide the chemical name:	I/C		Provide the chemical formula:
_____	1. CuO	_____	_____	26. Phosphorus trichloride	_____
_____	2. SrO	_____	_____	27. Chlorine monofluoride	_____
_____	3. B ₂ O ₃	_____	_____	28. Copper(II) chloride	_____
_____	4. TiCl ₄	_____	_____	29. Copper(I) sulfide	_____
_____	5. K ₂ S	_____	_____	30. Calcium nitride	_____
_____	6. OF ₂	_____	_____	31. Carbon tetrabromide	_____
_____	7. NH ₃	_____	_____	32. Lithium oxide	_____
_____	8. VF ₅	_____	_____	33. Potassium chloride	_____
_____	9. CuCl	_____	_____	34. Titanium(IV) bromide	_____
_____	10. MnO ₂	_____	_____	35. Magnesium sulfide	_____

11. MgO

12. B₂H₆

13. Li₂Te

14. Fe(NO₃)₃

15. CaSO₄

16. NaCl

17. K₂SO₄

18. CO₂

19. SF₆

36. Manganese(II) nitride

37. Calcium bromate

38. Sodium chloride

39. Trinitrogen dioxide

40. Lithium phosphate

41. Ammonium chloride

42. Copper(II) chlorite

43. Nitrogen monoxide

44. Iron(II) iodide

20. KClO₃

45. Calcium hydride