

WKS 1-4: Naming & Formulas of Ionic Compounds & Polyatomic Ions

| <u>Name to Formula</u> Put charges on ions first, then make neutral. Omit charges (but keep subscripts) on final answer. | <u>Formula to Name</u> Name the cation and the anion. |
|---|---|
| 1. calcium fluoride $\text{Ca}^{2+} \text{F}^{-} \rightarrow \text{CaF}_2$ | 2. MgBr_2 magnesium bromide |
| 3. aluminum oxide $\text{Al}^{3+} \text{O}^{2-} \rightarrow \text{Al}_2\text{O}_3$ | 4. CsF cesium fluoride |
| 5. magnesium nitride $\text{Mg}^{2+} \text{N}^{3-} \rightarrow \text{Mg}_3\text{N}_2$ | 6. Al_2S_3 aluminum sulfide |
| 7. aluminum sulfite $\text{Al}^{3+} \text{SO}_3^{2-} \rightarrow \text{Al}_2(\text{SO}_3)_3$ | 8. LiCN lithium cyanide |
| 9. magnesium hydroxide $\text{Mg}^{2+} \text{OH}^{-} \rightarrow \text{Mg}(\text{OH})_2$ | 10. $\text{Mg}(\text{HCO}_3)_2$ magnesium hydrogen carbonate |
| 11. sodium hydrogen sulfate $\text{Na}^{+} \text{HSO}_4^{-} \rightarrow \text{NaHSO}_4$ | 12. CsNO_2 cesium nitrite |
| 13. lithium iodate $\text{Li}^{+} \text{IO}_3^{-} \rightarrow \text{LiIO}_3$ | 14. $\text{Al}_2(\text{CO}_3)_3$ aluminum carbonate |
| 15. calcium hypochlorite $\text{Ca}^{2+} \text{ClO}^{-} \rightarrow \text{Ca}(\text{ClO})_2$ | 16. NaBrO_2 sodium bromite |
| 17. ammonium sulfate $\text{NH}_4^{+} \text{SO}_4^{2-} \rightarrow (\text{NH}_4)_2\text{SO}_4$ | 18. $(\text{NH}_4)_3\text{PO}_4$ ammonium phosphate |
| 19. barium nitrate $\text{Ba}^{2+} \text{NO}_3^{-} \rightarrow \text{Ba}(\text{NO}_3)_2$ | 20. $\text{KC}_2\text{H}_3\text{O}_2$ potassium acetate |

WKS 1-5: Stock System; Naming & Formulas of Binary Molecular (Covalent) Compounds

The Stock System: formulas & naming of ionic compounds

| <u>Name to Formula</u> (Put charges on ions first!!! Then make neutral.) | <u>Formula to Name</u> (Don't forget roman numerals for metals with more than one possible charge.) |
|--|--|
| 21. tin(IV) chromate $\text{Sn}^{4+} \text{CrO}_4^{2-} \rightarrow \text{Sn}(\text{CrO}_4)_2$ | 22. PbO_2 lead(IV) oxide |
| 23. zinc carbonate $\text{Zn}^{2+} \text{CO}_3^{2-} \rightarrow \text{ZnCO}_3$ | 24. FeSO_4 iron(II) sulfate |
| 25. mercury (II) chloride $\text{Hg}^{2+} \text{Cl}^- \rightarrow \text{HgCl}_2$ | 26. $\text{Ni}(\text{NO}_2)_3$ nickel(III) nitrite |
| 27. iron (III) oxide $\text{Fe}^{3+} \text{O}^{2-} \rightarrow \text{Fe}_2\text{O}_3$ | 28. CuCl_2 copper(II) chloride |
| 29. vanadium(V) hydroxide $\text{V}^{5+} \text{OH}^- \rightarrow \text{V}(\text{OH})_5$ | 30. Mo_2S_3 molybdenum(III) sulfide |
| 31. manganese (IV) carbonate $\text{Mn}^{4+} \text{CO}_3^{2-} \rightarrow \text{Mn}(\text{CO}_3)_2$ | 32. NbI_5 niobium(V) iodide |
| 33. chromium(VI) oxide $\text{Cr}^{6+} \text{O}^{2-} \rightarrow \text{CrO}_3$ | 34. $\text{Zn}(\text{OH})_2$ zinc hydroxide |
| 35. iridium(IV) phosphate $\text{Ir}^{4+} \text{PO}_4^{3-} \rightarrow \text{Ir}_3(\text{PO}_4)_4$ | 36. AgNO_3 silver nitrate |

Naming Binary molecular Compounds (two non-metals, not starting w/H)

In the table below, determine the formula of the binary covalent compound or acid from its name, or the name of the compound from the formula.

| <u>Name to Formula</u> | <u>Formula to Name</u> |
|--|---|
| 37. antimony tribromide SbBr_3 | 38. P_4S_5 tetraphosphorous pentasulfide |
| 39. dinitrogen trioxide N_2O_3 | 40. Si_2Br_6 disilicon hexabromide |
| 41. ammonia NH_3 | 42. SCl_4 sulfur tetrachloride |
| 43. phosphorus triiodide PI_3 | 44. CH_4 methane |
| 45. carbon monoxide CO | 46. N_2O dinitrogen monoxide |
| 47. tetraiodine nonoxide I_4O_9 | 48. IF_7 iodine heptafluoride |
| 49. bromine trichloride BrCl_3 | 50. P_4O_{10} tetraphosphorous decoxide |
| 51. xenon hexafluoride XeF_6 | 52. SeF_4 selenium tetrafluoride |

WKS 1-6: Naming & Formulas of Acids

In the table below, determine the name or the formula of the acid. From the formula, first determine the name of the anion, then determine the acid name. From the name, determine the anion formula first, then add enough H^+ ions to equalize charge

| Formula to Name | | Name to Formula | |
|-----------------|----------------------------------|-----------------------|--------------------------------------|
| 53. $HClO$ | hypochlorite → hypochlorous acid | 54. bromous acid | $BrO_2^- \rightarrow HBrO_2$ |
| 55. HF | fluoride → hydrofluoric acid | 56. hydroiodic acid | $I^- \rightarrow HI$ |
| 57. H_3PO_4 | phosphate → phosphoric acid | 58. sulfuric acid | $SO_4^{2-} \rightarrow H_2SO_4$ |
| 59. H_2CO_3 | carbonate → carbonic acid | 60. hydroselenic acid | $Se^{2-} \rightarrow H_2Se$ |
| 61. $H_2C_2O_4$ | oxalate → oxalic acid | 62. acetic acid | $C_2H_3O_2^- \rightarrow HC_2H_3O_2$ |
| 63. H_2Te | telluride → hydrotelluric acid | 64. chromic acid | $CrO_4^{2-} \rightarrow H_2CrO_4$ |