50 Ways to Name Your Compound

All of the compounds that you will be asked to name consist of two parts…

Part 1	Part 2	Example		Rule
Metal (single valent) (or ammonium)	Non-metal	NaCl,	sodium chloride	Name both parts, ends in -ide
	Polyatomic ion	$CaCO_3$	calcium carbonate	Name both parts
Metal (multivalent)	Non-metal	CuCl,	copper(I) chloride	Name both parts, ends in -ide, add valence after metal
	Polyatomic ion	$Fe_2(CO_3)_3$	iron(III) carbonate	Name both parts, add valence after metal
(Latin/old)	Non-metal or Polyatomic ion	$Fe_2(CO_3)_3$, CuCl	ferric carbonate, cuprous chloride	Metal has Latin name (ic for higher valence, ous for lower)
Non-metal	Non-metal	CO_2	carbon dioxide	Use Greek prefix system (mono- not used for 1st element)
Hydrogen	Non-metal	HCl	hydrogen chloride	If not aqueous, name hydrogen and non-metal (ending in -ide)
		HCl(aq)	hydrochloric acid	If aqueous, "hydro" + non-metal + "ic acid"
Hydrogen	Polyatomic ion	H_2SO_4	sulphuric acid	Name polyatomic ion (ending is -ic instead of -ate or -ous instead of -ite), add "acid"

Note: no special naming is given for bases. These are considered as a metal + polyatomic ion (OH^- being a polyatomic ion)

Assignment: write the corresponding name or formula for each of the following:

1. lead(II) sulfide PbS
2. perchloric acid $HClO_4$ (aq)
3. hydrogen fluoride HF (g)
4. zinc hydroxide $Zn(OH)_2$
5. hydrobromic acid HBr (aq)
6. SF_6(l) sulphur hexafluoride
7. HNO_2(aq) nitrous acid
8. HCl(g) hydrogen chloride
9. $PbCl_2$ lead (II) chloride
10. $ZnSO_4$ zinc sulphate
11. ammonium carbonate $(NH_4)_2CO_3$
12. chromium(III) sulfite $Cr_2(SO_3)_3$
*13. nickel(II) sulfate hexahydrate $NiSO_4 \cdot 6H_2O$
14. hydrosulfuric acid H_2S (aq)
15. sulfur trioxide SO_3
16. H_2CrO_4 chromic acid / hydrogen chromate
17. Al_2O_3 aluminum oxide
18. N_2O_3 dinitrogen trioxide
19. H_2SO_3 sulphurous acid / hydrogen sulphite
20. HgO(aq) mercury (II) oxide
21. iron(II) nitride Fe_3N_2
22. tetraphosphorus decaoxide P_4O_{10}
23. copper(I) oxide Cu_2O
24. hypochlorous acid HClO (aq)
*25. potassium peroxide KO_2
26. $CuSO_3$ copper (II) sulphite
27. CO carbon monoxide
28. MgS magnesium sulphide
29. $KClO_2$ potassium chlorite
30. HI(aq) hydroiodic acid
31. nitrogen trichloride NCl_3
32. plumbic carbonate $Pb(CO_3)_2$
33. potassium hydrogen sulfite $KHSO_3$
34. boric acid H_3BO_3(aq)
35. barium sulfite $BaSO_3$
36. $SnCl_2$ tin (II) chloride
37. $CaHPO_3$(s) calcium biphosphite
38. H_2S(g) hydrogen sulphide
*39. Li_2O_2 lithium peroxide
40. $Mn(NO_2)_2$ manganese (II) nitrite
41. mercuric phosphate $Hg_3(PO_4)_2$
42. sodium hydrogen carbonate $NaHCO_3$
43. copper(I) hydrogen sulfate $CuHSO_4$
44. carbon tetrachloride CCl_4
45. ammonium phosphate $(NH_4)_3PO_4$
46. SO_2(aq) sulphur dioxide
47. $MgSO_4 \cdot 9H_2O$ magnesium sulphate nonahydrate
48. $HC_2H_3O_2$ acetic acid / hydrogen acetate
49. P_2O_3 diphosphorus trioxide
50. H_3PO_3 phosphorous acid / hydrogen phosphite