

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) (Latin/old)	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
	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 1 st 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 ₂ SO 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 followings

- | | | |
|-------------------------------------|------------------------------------|---|
| 1. lead(II) sulfide | 18. N ₂ O ₃ | 35. barium sulfite |
| 2. perchloric acid | 19. H ₂ SO ₃ | 36. SnCl ₂ |
| 3. hydrogen fluoride | 20. HgO(aq) | 37. CaHPO ₃ (s) |
| 4. zinc hydroxide | 21. iron(II) nitride | 38. H ₂ S(g) |
| 5. hydrobromic acid | 22. tetraphosphorus decaoxide | 39. Li ₂ O ₂ |
| 6. SF ₆ (l) | 23. copper(I) oxide | 40. Mn(NO ₂) ₂ |
| 7. HNO ₂ (aq) | 24. hypochlorous acid | 41. mercuric phosphate |
| 8. HCl(g) | 25. potassium peroxide | 42. sodium hydrogen carbonate |
| 9. PbCl ₂ | 26. CuSO ₃ | 43. copper(I) hydrogen sulfate |
| 10. ZnSO ₄ | 27. CO | 44. carbon tetrachloride |
| 11. ammonium carbonate | 28. MgS | 45. ammonium phosphate |
| 12. chromium(III) sulfite | 29. KClO ₂ | 46. SO ₂ (aq) |
| 13. nickel(II) sulfate hexahydrate | 30. HI(aq) | 47. MgSO ₄ ·9H ₂ O |
| 14. hydrosulfuric acid | 31. nitrogen trichloride | 48. HC ₂ H ₃ O ₂ |
| 15. sulfur trioxide | 32. plumbic carbonate | 49. P ₂ O ₃ |
| 16. H ₂ CrO ₄ | 33. potassium hydrogen sulfite | 50. H ₃ PO ₃ |
| 17. Al ₂ O ₃ | 34. boric acid | |