

Binary Ionic Compounds

- | | |
|-----------------------------|---|
| 1.) sodium oxide _____ | 11.) Na ₂ S _____ |
| 2.) calcium oxide _____ | 12.) Be ₃ P ₂ _____ |
| 3.) aluminum chloride _____ | 13.) CaBr ₂ _____ |
| 4.) potassium sulfide _____ | 14.) SrCl ₂ _____ |
| 5.) magnesium bromide _____ | 15.) KF _____ |
| 6.) strontium nitride _____ | 16.) AlN _____ |
| 7.) lithium fluoride _____ | 17.) Al ₂ S ₃ _____ |
| 8.) beryllium bromide _____ | 18.) MgCl ₂ _____ |
| 9.) sodium phosphide _____ | 19.) BeO _____ |
| 10.) calcium nitride _____ | 20.) Rb ₃ P _____ |

1. Na ₂ O	2. CaO	3. AlCl ₃	4. K ₂ S	5. MgBr ₂	6. Sr ₃ N ₂	7. LiF	8. BeBr ₂	9. Na ₃ P	10. Ca ₃ N ₂
11. sodium sulfide			12. Beryllium phosphide			13. Calcium bromide			14. Strontium chloride
15. potassium fluoride			16. Aluminum nitride			17. Aluminum sulfide			18. Magnesium chloride
19. beryllium oxide			20. Rubidium phosphide						

Binary Ionic Compounds: Multivalent Metals

- | | |
|-----------------------------------|---|
| 1.) Lead (II) Oxide _____ | 11.) Ni ₂ S ₃ _____ |
| 2.) Manganese (II) Oxide _____ | 12.) V ₃ P ₄ _____ |
| 3.) Tin (II) Chloride _____ | 13.) CoBr ₂ _____ |
| 4.) Iron (III) Oxide _____ | 14.) Cu ₃ N ₂ _____ |
| 5.) Mercury (II) Bromide _____ | 15.) SnS ₂ _____ |
| 6.) Copper (I) Oxide _____ | 16.) FeN _____ |
| 7.) Cobalt (III) Chloride _____ | 17.) Fe ₂ S ₃ _____ |
| 8.) Lead (IV) Oxide _____ | 18.) MnCl ₄ _____ |
| 9.) Chromium (III) Chloride _____ | 19.) SnO _____ |
| 10.) Chromium (II) Nitride _____ | 20.) Co ₂ S ₃ _____ |

1. PbO	2. MnO	3. SnCl ₂	4. Fe ₂ O ₃	5. HgBr ₂	6. Cu ₂ O	7. CoCl ₃	8. PbO ₂	9. CrCl ₃	10. Cr ₃ N ₂
11. nickel(III)sulfide			12. Vanadium(IV) phosphide			13. Cobalt(II) bromide			14. Copper(II)nitride
15. tin(IV)sulfide			16. Iron(III) nitride			17. Iron(III)sulfide			18. Manganese(IV) chloride
19. tin(II)oxide			20. Cobalt(III)sulfide						

Binary Ionic Compounds: Mixed

- | | |
|---------------------------------|--|
| 1) Lithium Oxide _____ | 16) SrI ₂ _____ |
| 2) Nickel (II) Sulfide _____ | 17) Au ₂ S _____ |
| 3) potassium Fluoride _____ | 18) NiBr ₃ _____ |
| 4) Calcium Phosphide _____ | 19) BaBr ₂ _____ |
| 5) Chromium (III) Sulfide _____ | 20) CdS _____ |
| 6) Aluminum Oxide _____ | 21) FeCl ₂ _____ |
| 7) Copper (II) Phosphide _____ | 22) Cu ₂ S _____ |
| 8) Lead (IV) Bromide _____ | 23) BeO _____ |
| 9) Zinc Sulfide _____ | 24) VO ₂ _____ |
| 10) Cobalt (II) Chloride _____ | 25) Ag ₂ O _____ |
| 11) Gold(III)Nitride _____ | 26) Na ₂ S _____ |
| 12) VS _____ | 27) LiH _____ |
| 13) PbO ₂ _____ | 28) V ₃ N ₅ _____ |
| 14) PbCl ₂ _____ | 29) Ba ₃ P ₂ _____ |
| 15) MgBr ₂ _____ | 30) SnCl ₄ _____ |

- | | | | | | | | | | | |
|--------------------------|------------------------|-----------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|----------------------|--------|-----------------------|---------|
| 1. Li ₂ O | 2. NiS | 3. KF | 4. Ca ₃ P ₂ | 5. Cr ₂ S ₃ | 6. Al ₂ O ₃ | 7. Cu ₃ P ₂ | 8. PbBr ₄ | 9. ZnS | 10. CoCl ₂ | 11. AuN |
| 12. Vanadium(II) sulfide | 13. Lead(IV)oxide | 14. Lead(II)chloride | 15. Magnesium bromide | 16. Strontium iodide | | | | | | |
| 17. gold(I)sulfide | 18. Nickel(III)bromide | 19. Barium bromide | 20. Cadmium sulfide | 21. Iron(II)chloride | | | | | | |
| 22. copper(I)sulfide | 23. Beryllium oxide | 24. Vanadium(IV)oxide | 25. Silver oxide | 26. Sodium sulfide | | | | | | |
| 27. lithium hydride | 28. Vanadium(V)nitride | 29. Barium phosphide | 30. Tin(IV)chloride | | | | | | | |

Complex Ionic Compounds: Worksheet

- 1) barium sulfate trihydrate _____
- 2) lead (II) acetate _____
- 3) nickel (II) hypochlorite _____
- 4) tin (IV) chlorate _____
- 5) manganese (IV) carbonate hexahydrate _____
- 6) copper (II) nitrite _____
- 7) iron (III) hydroxide _____
- 8) sodium cyanide _____
- 9) ammonium chloride _____
- 10) ammonium nitrate _____
- 11) $Mg(ClO_4)_2$ _____
- 12) $LiClO_2$ _____
- 13) $CuOH$ _____
- 14) $Cu(ClO_3)_2$ _____
- 15) $AgNO_3$ _____
- 16) $Al(ClO)_3$ _____
- 17) $LiCN$ _____
- 18) $(NH_4)_2C_2O_4$ _____
- 19) $CuSO_4 \cdot 5H_2O$ _____
- 20) Na_3PO_4 _____

- | | | | | | | |
|-------------------------|----------------------|------------------------|------------------------------------|-----------------------------|-----------------|---------------|
| 1. $BaSO_4 \cdot 3H_2O$ | 2. $Pb(C_2H_3O_2)_2$ | 3. $Ni(ClO)_2$ | 4. $Sn(ClO_3)_4$ | 5. $Mn(CO_3)_2 \cdot 6H_2O$ | 6. $Cu(NO_2)_2$ | 7. $Fe(OH)_3$ |
| 8. NaCN | 9. NH_4Cl | 10. NH_4NO_3 | 11. Magnesium perchlorate | 12. Lithium chlorite | | |
| 13. Copper(I)hydroxide | | 14. Copper(II)chlorate | 15. Silver nitrate | 16. Aluminum hypochlorite | | |
| 17. Lithium cyanide | | 18. Ammonium chromate | 19. Copper(II)sulfate pentahydrate | 20. Sodium phosphate | | |

Acids: Worksheet
Use Classical Naming

1. HNO_3 (aq) _____

2. $\text{HC}_2\text{H}_3\text{O}_2$ (aq) _____

3. H_3PO_4 (aq) _____

4. HCl (aq) _____

5. HClO (aq) _____

6. HFO_3 (aq) _____

7. HIO_2 (aq) _____

8. HBrO_4 (aq) _____

9. HI (aq) _____

10. sulfurous acid _____

11. carbonic acid _____

12. sulfuric acid _____

13. hydrobromic acid _____

14. hypobromous acid _____

15. perfluoric acid _____

16. hydrofluoric acid _____

17. nitrous acid _____

18. iodic acid _____

1. nitric acid	2. Acetic acid	3. Phosphoric acid	4. Hydrochloric acid	5. Hypochlorous acid
6. Fluoric acid	7. Iodous acid	8. Perbromic acid	9. Hydroiodic acid	10. H_2SO_3
11. H_2CO_3	12. H_2SO_4	13. HBr	14. HBrO	15. HFO_4
16. HF	17. HNO_2	18. HIO_3		

Molecular Compounds Worksheet

1. carbon monoxide_____

2. nitrogen dioxide_____

3. oxygen difluoride_____

4. carbon tetraiodide_____

5. dinitrogen trioxide_____

6. phosphorus trichloride_____

7. trisilicon tetranitride_____

8. dinitrogen monoxide_____

9. phosphorus pentachloride_____

10. carbon tetrachloride_____

11. boron trihydride_____

12. germanium disulfide_____

13. sulfur dichloride_____

14. PI_3 _____

15. CS_2 _____

16. PBr_3 _____

17. NO _____

18. H_2O _____

19. P_4O_{10} _____

20. SiO_2 _____

21. N_2O_5 _____

22. SO_3 _____

23. N_2O_4 _____

24. ICl_3 _____

25. PBr_5 _____

26. As_2O_5 _____

1. CO	2. NO_2	3. OF_2	4. Cl_4	5. N_2O_4	6. PCl_3	7. Si_3N_4	8. N_2O	9. PCl_5	10. CCl_4	11. BH_3	12. GeS_2	13. SCl_2
14. Phosphorous triiodide	15. Carbon disulfide						16. Phosphorous tribromide				17. Nitrogen monoxide	
18. Dihydrogen monoxide	19. Tetraphosphorous decaoxide						20. Silicon dioxide				21. Dinitrogen pentaoxide	
22. sulfur trioxide	23. Dinitrogen tetraoxide						24. Iodine trichloride					
25. Phosphorous pentabromide							26. Diarsenic pentaoxide					

50 Ways to Name Your Compound

Write the corresponding name or formula for each of the following:

- | | |
|-----------------------------------|-------------------------------|
| 1. lead(II)sulfide | 17. Al_2O_3 |
| 2. perchloric acid | 18. N_2O_3 |
| 3. hydrofluoric acid | 19. H_2SO_3 |
| 4. zinc hydroxide | 20. Au_2O |
| 5. hydrobromic acid | 21. iron(II)nitride |
| 6. SF_6 | 22. tetraphosphorus decaoxide |
| 7. HNO_2 | 23. copper(I)oxide |
| 8. HCl | 24. hypochlorous acid |
| 9. PbCl_2 | 25. potassium oxide |
| 10. ZnSO_4 | 26. CuSO_3 |
| 11. ammonium carbonate | 27. CO |
| 12. chromium(III)sulfite | 28. MgS |
| 13. nickel(II)sulfate hexahydrate | 29. KClO_2 |
| 14. hydrosulfuric acid | 30. HI |
| 15. sulfur trioxide | 31. nitrogen trichloride |
| 16. Na_2CrO_4 | 32. lead (IV) carbonate |

33. potassium hydrogen carbonate

42. sodium carbonate

34. acetic acid

43. copper(I) chloride

35. barium sulfite

44. carbon tetrachloride

36. SnCl_2

45. ammonium phosphate

37. CaHPO_3

46. SO_2

38. I_2S

47. $\text{MgSO}_4 \cdot 9\text{H}_2\text{O}$

39. Li_2O

48. HClO_3

40. $\text{Mn}(\text{NO}_2)_2$

49. P_2O_3

41. tin(II)phosphate

50. H_3PO_4

Answers to "50 Ways to Name Your Compound"

- | | | |
|--|---------------------------------------|-----------------------------------|
| 1. PbS | 18. Dinitrogen Trioxide | 35. BaSO_3 |
| 2. HClO_4 | 19. Sulfurous acid | 36. Tin (II) Chloride |
| 3. HF | 20. Gold(I) oxide | 37. Calcium hydrogen phosphate |
| 4. $\text{Zn}(\text{OH})_2$ | 21. Fe_3N_2 | 38. Diiodine monosulfide |
| 5. HBr | 22. P_4O_{10} | 39. Lithium oxide |
| 6. Sulfur Hexafluoride | 23. Cu_2O | 40. Manganese (II) Nitrite |
| 7. Nitrous Acid | 24. HClO | 41. $\text{Sn}_3(\text{PO}_4)_2$ |
| 8. Hydrochloric Acid | 25. K_2O | 42. Na_2CO_3 |
| 9. Lead (II) Chloride | 26. Copper (II) Sulfite | 43. CuCl |
| 10. Zinc Sulfate | 27. Carbon Monoxide | 44. CCl_4 |
| 11. $(\text{NH}_4)_2\text{CO}_3$ | 28. Magnesium Sulfide | 45. $(\text{NH}_4)_3\text{PO}_4$ |
| 12. $\text{Cr}_2(\text{SO}_3)_3$ | 29. Potassium Chlorite | 46. Sulfur dioxide |
| 13. $\text{NiSO}_4 \cdot 6 \text{H}_2\text{O}$ | 30. Hydroiodic Acid | 47. Magnesium Sulfate Nonahydrate |
| 14. H_2S | 31. NCl_3 | 48. chloric Acid |
| 15. SO_3 | 32. $\text{Pb}(\text{CO}_3)_2$ | 49. Diphosphorous Trioxide |
| 16. Sodium chormate | 33. KHCO_3 | 50. Phosphoric Acid |
| 17. Aluminum Oxide | 34. $\text{HC}_2\text{H}_3\text{O}_2$ | |