

Unit 4 – Worksheet 1

Molecular Compounds

Properties

Basic structural unit

Laws of definite & multiple proportions

1. Name each of the following binary compounds of non-metallic elements

a. CBr_4 Carbon tetrabromide

b. N_2P_3 dinitrogen triphosphide

c. PCl_3 phosphorous trichloride

d. ICl Iodine ^{mono}chloride

e. N_2O dinitrogen monoxide

f. SiF_4 Silicon tetrafluoride

2. Write the name for the following compounds of nonmetallic elements.

a. GeH_4 Germanium tetrahydride

b. N_2Br_4 dinitrogen tetrabromide

c. P_2S_5 diphosphorous pentasulfide

d. SeO_2 Selenium dioxide

e. NH_3 nitrogen trihydride

f. SiO_2 Silicon dioxide

3. Write the formula for the following binary compounds of nonmetallic elements.

a. phosphorus triiodide PI_3

b. silicon tetrachloride SiCl_4

c. dinitrogen pentoxide N_2O_5

e. dinitrogen tetroxide N_2O_4

f. carbon monoxide CO

4. Write the formula for these compounds of nonmetallic elements.

a. carbon dioxide CO_2

b. sulfur hexafluoride SF_6

c. dinitrogen tetrachloride N_2Cl_4

d. carbon tetraiodide CI_4

e. phosphorus pentafluoride PF_5

f. diphosphorus pentoxide P_2O_5

Ionic Compound Practice

Give a correct formula for each compound. For fun, samples of the actual compounds can be seen around the lab tables.

1. Sodium hydrogen carbonate (*baking soda*)
 NaHCO_3
2. mercury (II) oxide
 HgO
3. potassium permanganate KMnO_4
4. iron (II) sulfide Fe_2S
5. copper (II) sulfate Cu_2SO_4
6. potassium nitrate KNO_3
7. sodium hydroxide NaOH
8. lead (II) oxide PbO
9. manganese (IV) oxide MnO_2
10. nickel (II) sulfate NiSO_4
11. chromium (III) oxide Cr_2O_3
12. potassium chromate K_2CrO_4
13. potassium dichromate $\text{K}_2\text{Cr}_2\text{O}_7$

14. sodium chloride NaCl
15. nickel (II) nitrate $\text{Ni(NO}_3)_2$
16. cobalt (II) chloride CoCl_2
17. lead (II) sulfide (*galena*) PbS
18. iron (II) chloride FeCl_2
19. sodium phosphate Na_3PO_4
20. calcium fluoride CaF_2
21. ammonium dichromate $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$
22. antimony (III) sulfide (antimony: Sb) Sb_2S_3
23. chromium (III) sulfate $\text{Cr}_2(\text{SO}_4)_3$
24. copper (II) chloride CuCl_2
25. potassium hydrogen phosphate K_2HPO_4
26. zinc acetate $\text{Zn}(\text{C}_2\text{H}_3\text{O}_2)_2$