

9.c Molecular Compounds: Names & Formulas Worksheet

1. Write the **formulas** for the following compounds.

- a) silicon dioxide: SO_2
- b) water : H_2O
- c) carbon disulfide: CS_2
- d) ammonia (nitrogen trihydride): NH_3
- e) carbon tetrachloride: CCl_4
- f) methane (carbon tetrahydride): CH_4
- g) diphosphorus trioxide: P_2O_3
- h) oxygen dichloride: OCl_2
- i) arsenic tribromide: AsBr_3
- j) phosphorus tribromide: PBr_3
- k) ** silicon carbide: SiC (not monocarbide!)
- l) sulfur monoxide: SO

2. Write the **names** for the following compounds

- a) CF_4 : Carbon Fluoride
- b) NH_3 : Nitrogen Trihydride
- c) PBr_3 : Phosphorus Tribromide
- d) F_2 : Fluoride
- e) CS_2 : Cesium Sulfide
- f) SiC : Silicon Monocarbide
- g) CH_4 : Methane or Carbon Tetrahydride
- h) SiO_2 : Silicon Dioxide
- i) PCl_3 : Phosphorus Tricarbide
- j) I_2 : Iodide
- k) SF_2 : Sulfur dihydride

Name: _____

Formula Writing – Molecular Binary Compounds

Write the chemical names of the following molecular binary compounds. Prefixes need to be used.

- | | |
|---------------------------------------|----------------------------------|
| ① N_2O dinitrogen monoxide | ⑨ NO_2 nitrogen dioxide |
| ② ICl_3 iodine trichloride | ⑩ CO_2 carbon dioxide |
| ③ $SeCl_6$ selenium hexachloride | ⑪ CF_4 carbon tetrafluoride |
| ④ N_2O_3 dinitrogen trioxide | ⑫ SiO_2 silicon dioxide |
| ⑤ CO carbon monoxide | ⑬ PCl_3 phosphorus trichloride |
| ⑥ H_2O water | ⑭ N_2O_5 dinitrogen pentaoxide |
| ⑦ P_4S_3 tetraphosphorus trisulfide | ⑮ SF_6 sulfur hexafluoride |
| ⑧ PBr_3 phosphorus tribromide | ⑯ SO_2 sulfur dioxide |

Write the molecular binary formula for the following molecular binary compounds.

- | | |
|--|--------------------------------------|
| 1) Silicon tetrafluoride SiF_4 | 8) Antimony pentafluoride SbF_5 |
| 2) Dinitrogen monoxide N_2O | 9) Carbon disulfide CS_2 |
| 3) Sulfur trioxide SO_3 | 10) Carbon tetraiodide CI_4 |
| 4) Iodine pentafluoride IF_5 | 11) Boron trichloride BCl_3 |
| 5) Tetraphosphorus trisulfide P_4S_3 | 12) Diarsenic trisulfide As_2S_3 |
| 6) Nitrogen monoxide NO | 13) Diphosphorous pentoxide P_2O_5 |
| 7) Disilicon tetraselenide
Si_2Se_4 | 14) Nitrogen triphosphide NP_3 |

1. Identify each compound as ionic or covalent. Then write the name of each compound.

Formula	Ionic/Covalent	Name
a. NaNO_3	Ionic	Sodium Nitrate
b. MgSO_4	Ionic	Magnesium Sulfate
c. K_2CO_3	Ionic	Potassium Carbonate
d. NaCl	Ionic	Sodium Chloride
e. MgBr_2	Ionic	Magnesium Bromide
f. CO_2	Covalent	Carbon Dioxide
g. H_2O	Covalent	Dihydrogen Monoxide (water)
h. CH_4	Covalent	Carbon Tetrahydride

2. Name the following compounds... you might want to write an I or C once you figure out the kind of bond it is and THEN name it.

a.	MgF_2	I	Magnesium Fluoride
b.	Na_2CO_3	I	Sodium Carbonate
c.	K_2CO_3	I	Potassium Carbonate
d.	NaCl	I	Sodium Chloride
e.	MgBr_2	I	Magnesium Bromide
f.	KF	I	Potassium Fluoride
g.	BeF_2	I	Beryllium Fluoride
h.	SO_2	C	Sulfur Dioxide

Mixed Names and Formulas III - Answers

Name the following chemical compounds:

- | | | |
|-----|---|-----------------------|
| 1) | CaF ₂ | calcium fluoride |
| 2) | P ₂ O ₃ | diphosphorus trioxide |
| 3) | AgNO ₃ | silver nitrate |
| 4) | Al ₂ (CO ₃) ₃ | aluminum carbonate |
| 5) | NaBr | sodium bromide |
| 6) | H ₂ SO ₄ | sulfuric acid |
| 7) | NH ₃ | ammonia |
| 8) | Ti(SO ₄) ₂ | titanium (IV) sulfate |
| 9) | SO ₂ | sulfur dioxide |
| 10) | HCN | hydrocyanic acid |

Write the formulas of the following chemical compounds:

- | | | |
|-----|-------------------------|---|
| 11) | disilicon tetraselenide | Si ₂ Se ₄ |
| 12) | cobalt (II) chloride | CoCl ₂ |
| 13) | methane | CH ₄ |
| 14) | copper (I) acetate | CuC ₂ H ₃ O ₂ |
| 15) | hydrosulfuric acid | H ₂ S |
| 16) | lithium phosphide | Li ₃ P |
| 17) | fluorine | F ₂ |
| 18) | manganese (IV) nitride | Mn ₃ N ₂ |
| 19) | iron (III) sulfite | Fe ₂ (SO ₃) ₃ |
| 20) | boron trichloride | BCl ₃ |