

Nomenclature Exercise

Name: _____

Let your criteria for the naming of compounds and the writing of formulas be these: be sure that there is enough information in the name or formula to be complete, but do not put in too much.

1. Ions: Write the formulas and electric charges for the following ions.

Carbonate Ion	_____	Sulfite Ion	_____
Chloride Ion	_____	Sulfide Ion	_____
Sulfate Ion	_____	Phosphate Ion	_____
Acetate Ion	_____	Nitride Ion	_____
Sodium Ion	_____	Chlorate Ion	_____
Hydroxide Ion	_____	Aluminum Ion	_____
Dichromate Ion	_____	Oxide Ion	_____
Nitrate Ion	_____	Chlorite Ion	_____
Nitrite Ion	_____	Perchlorate Ion	_____
Magnesium Ion	_____	Hypochlorite Ion	_____
Permanganate Ion	_____	Fluoride Ion	_____
Dihydrogen Phosphate Ion	_____	Cyanide Ion	_____
Hydrogen Carbonate Ion	_____	Ammonium Ion	_____
(or Bicarbonate)			
Hydrogen Sulfate Ion	_____	Oxalate Ion	_____
(or Bisulfate)			
Hydrogen Sulfite Ion	_____	Calcium Ion	_____
(or Bisulfite)			
Hydrogen Phosphate Ion	_____	Chromate Ion	_____
Bromate Ion	_____	Iodate Ion	_____
Cesium Ion	_____	Phosphide Ion	_____
Thiosulfate Ion	_____	Peroxide Ion	_____
Zinc Ion	_____	Silver Ion	_____

2. Ionic Compounds:**A. Write names for the following compounds**

NaCl_____	Ca(C ₂ H ₃ O ₂) ₂ _____
Zn(OH) ₂ _____	Mg(NO ₃) ₂ _____
FeSO ₄ _____	Cu ₂ CO ₃ _____
Pb(CN) ₂ _____	SrCrO ₄ _____
KMnO ₄ _____	Mg ₃ N ₂ _____
Sn(S ₂ O ₃) ₂ _____	HgS_____
LiH_____	CoBr ₃ _____
NH ₄ NO ₂ _____	NaHCO ₃ _____

B. Write formulas for the following compounds:

Potassium Perchlorate_____	Potassium Chlorate_____
Potassium Chlorite_____	Potassium Hypochlorite_____
Iron(III) Sulfite_____	Copper(II) Bromide_____
Tin(II) Dichromate_____	Calcium Cyanide_____
Sodium Phosphide_____	Aluminum Oxide_____
Lead(IV) Chloride_____	Ammonium Bromide_____
Barium Chloride_____	Lithium Oxide_____
Sodium Dihydrogen Phosphate_____	
Silver Hydrogen Sulfate (or Silver Bisulfate)_____	

3. Binary Molecular (Covalent) Compounds**A. Name the following compounds:**

CO	_____
PCl ₅	_____
SO ₂	_____
NO ₂	_____

NBr₃ _____

CS₂ _____

B. Write formulas for the following compounds:

Silicon Tetrachloride _____

Dinitrogen Pentoxide _____

Carbon Dioxide _____

Xenon Hexafluoride _____

4. Acids

A. Name the following acids:

HBr(aq) _____

H₃PO₄(aq) _____

H₂S(aq) _____

HClO(aq) _____

HNO₂(aq) _____

HC₂H₃O₂(aq) _____

HCl(aq) _____

B. Write formulas for the following acids:

Hydrofluoric Acid _____ Perchloric Acid _____

Nitric Acid _____ Sulfuric Acid _____

Carbonic Acid _____

5. Hydrates

A. Name the following hydrates:

FeSO₄ • 7H₂O _____

CaCl₂ • 2H₂O _____

SnCl₂ • 3H₂O _____

B. Write formulas for the following hydrates:

Copper(II) Sulfate Pentahydrate _____

Sodium Carbonate Decahydrate _____

Ammonium Sulfite Monohydrate _____

6. Name the following compounds: (Hint: First decide if the compound is ionic, molecular or if it is an acid and then name it appropriately.)

HI(aq)	_____
NaI	_____
Na ₂ S	_____
Ca(NO ₃) ₂	_____
Pb(OH) ₂	_____
PF ₃	_____
HNO ₃ (aq)	_____
NH ₄ NO ₃	_____
S ₄ N ₄	_____
Zn ₃ (PO ₄) ₂ • 8H ₂ O	_____
Fe ₂ O ₃	_____
ZnCr ₂ O ₇	_____
SO ₃	_____
AgCl	_____
MgCO ₃	_____
P ₂ O ₅	_____
Al ₂ (CO ₃) ₃	_____

7. Write the formulas for the following compounds: (Be sure to balance charges for the ionic compounds.)

Lithium Cyanide	_____	Sulfuric Acid	_____
Mercury(II) Oxide	_____	Potassium Hydroxide	_____
Barium Bromide	_____	Copper(II) Sulfate	_____
Oxalic Acid	_____	Chromium(II) Nitrate	_____
Sodium Chromate	_____	Aluminum Iodide	_____
Magnesium Phosphide	_____	Carbon Tetrachloride	_____
Disulfur Decafluoride	_____	Calcium Peroxide	_____
Cadmium Permanganate Hexahydrate	_____		_____

8. Write the formulas for the following well-known substances:

water	_____
ammonia	_____