

# Unit 2

# Homework

# Packet

**Miss Adams**  
**Honors Chemistry 1**

**Name:** \_\_\_\_\_

# HW #1: Architecture of the Atom

Use the periodic table when necessary, complete the table below.

Symbol	Charge	Number of Protons	Number of Electrons	Number of Neutrons
	0	10		11
Ba	0			82
	+3	21		24
		15	18	16
	-2	34		46
$^{98}_{42}\text{Mo}$	0			
	+3	63		88
$^{207}_{82}\text{Pb}$	0			

## Chemical Formula Writing Worksheet #2

Write chemical formulas for the compounds in each box. The names are found by finding the intersection between the cations and anions. Example: The first box is the intersection between the “zinc” cation and the “chloride” anion, so you should write “ZnCl<sub>2</sub>”, as shown.

**Note:** the charge on **zinc** is always +2 and the charge on **silver** is always +1, so **NO** Roman numerals are written with their names. The charge on gallium can be determined from its position on the periodic table!

	<i>zinc</i>	<i>iron (II)</i>	<i>iron (III)</i>	<i>gallium</i>	<i>silver</i>	<i>lead (IV)</i>
<i>chloride</i>	ZnCl <sub>2</sub>				AgCl	
<i>acetate</i>						
<i>nitrate</i>						
<i>oxide</i>						
<i>nitride</i>						
<i>sulfate</i>						

Write formulas for the following compounds. Use the periodic table as needed.

1) copper (II) chloride

7) aluminum arsenide

2) lithium acetate

8) potassium permanganate

3) vanadium (III) selenide

9) chromium (VI) cyanide

4) manganese (IV) nitride

10) tin (II) sulfite

5) beryllium oxide

11) vanadium (V) fluoride

6) sodium sulfate

12) ammonium nitrate

### Naming Ionic Compounds Practice Worksheet #3

For the list on the left, name the compound. For the list on the right, give the chemical formula that corresponds to the name

	<b>Name</b>		<b>Formula</b>
1)	NaF	13)	potassium fluoride
2)	K <sub>2</sub> CO <sub>3</sub>	14)	ammonium sulfate
3)	MgCl <sub>2</sub>	15)	magnesium iodide
4)	Be(OH) <sub>2</sub>	16)	copper (II) sulfite
5)	SrS	17)	aluminum phosphate
6)	Cu <sub>2</sub> S	18)	lead (II) nitrite
7)	ZnI <sub>2</sub>	19)	cobalt (II) selenide
8)	Ca <sub>3</sub> (PO <sub>4</sub> ) <sub>2</sub>	20)	silver cyanide
9)	NH <sub>4</sub> I	21)	copper (II) bicarbonate
10)	Mn(NO <sub>3</sub> ) <sub>3</sub>	22)	iron (II) oxide
11)	FePO <sub>4</sub>	23)	lithium cyanide
12)	CoCO <sub>3</sub>	24)	lead (IV) sulfite

## Naming Ionic Compounds Practice Worksheet #4

Give the name of the following ionic compounds:

- 1)  $\text{Na}_2\text{CO}_3$  \_\_\_\_\_
- 2)  $\text{NaOH}$  \_\_\_\_\_
- 3)  $\text{MgBr}_2$  \_\_\_\_\_
- 4)  $\text{KCl}$  \_\_\_\_\_
- 5)  $\text{FeCl}_2$  \_\_\_\_\_
- 6)  $\text{FeCl}_3$  \_\_\_\_\_
- 7)  $\text{Zn(OH)}_2$  \_\_\_\_\_
- 8)  $\text{BeSO}_4$  \_\_\_\_\_
- 9)  $\text{CrF}_2$  \_\_\_\_\_
- 10)  $\text{Al}_2\text{S}_3$  \_\_\_\_\_
- 11)  $\text{PbO}$  \_\_\_\_\_
- 12)  $\text{Li}_3\text{PO}_4$  \_\_\_\_\_
- 13)  $\text{TiI}_4$  \_\_\_\_\_
- 14)  $\text{Co}_3\text{N}_2$  \_\_\_\_\_
- 15)  $\text{Mg}_3\text{P}_2$  \_\_\_\_\_
- 16)  $\text{Ga(NO}_2)_3$  \_\_\_\_\_
- 17)  $\text{Ag}_2\text{SO}_3$  \_\_\_\_\_
- 18)  $\text{NH}_4\text{OH}$  \_\_\_\_\_
- 19)  $\text{Al(CN)}_3$  \_\_\_\_\_
- 20)  $\text{Be(CH}_3\text{COO)}_2$  \_\_\_\_\_

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## **Writing Formulas of Ionic Compounds Practice Worksheet #4**

*For the following compounds, give the formulas*

22) sodium phosphide \_\_\_\_\_

23) magnesium nitrate \_\_\_\_\_

24) lead (II) sulfite \_\_\_\_\_

25) calcium phosphate \_\_\_\_\_

26) ammonium sulfate \_\_\_\_\_

27) silver cyanide \_\_\_\_\_

28) aluminum sulfide \_\_\_\_\_

29) beryllium chloride \_\_\_\_\_

30) copper (I) arsenide \_\_\_\_\_

31) iron (III) oxide \_\_\_\_\_

32) gallium nitride \_\_\_\_\_

33) iron (II) bromide \_\_\_\_\_

34) vanadium (V) phosphate \_\_\_\_\_

35) calcium oxide \_\_\_\_\_

36) magnesium acetate \_\_\_\_\_

37) aluminum sulfate \_\_\_\_\_

38) copper (I) carbonate \_\_\_\_\_

39) barium oxide \_\_\_\_\_

40) ammonium sulfite \_\_\_\_\_

41) silver bromide \_\_\_\_\_

42) lead (IV) nitrite \_\_\_\_\_

## Naming Covalent Compounds Worksheet #5

*Write the formulas for the following covalent compounds:*

- 1) antimony tribromide \_\_\_\_\_
- 2) hexaboron monosilicide \_\_\_\_\_
- 3) chlorine dioxide \_\_\_\_\_
- 4) hydrogen monoiodide \_\_\_\_\_
- 5) iodine pentafluoride \_\_\_\_\_
- 6) dinitrogen trioxide \_\_\_\_\_
- 7) ammonia (Hint: This is a common name for nitrogen trihydride) \_\_\_\_\_
- 8) phosphorus triiodide \_\_\_\_\_

*Write the names for the following covalent compounds:*

- 9)  $P_4S_5$  \_\_\_\_\_
- 10)  $O_2$  \_\_\_\_\_
- 11)  $SeF_6$  \_\_\_\_\_
- 12)  $Si_2Br_6$  \_\_\_\_\_
- 13)  $SCl_4$  \_\_\_\_\_
- 14)  $CH_4$  \_\_\_\_\_
- 15)  $B_2Si$  \_\_\_\_\_
- 16)  $NF_3$  \_\_\_\_\_

## Naming Covalent Compounds Worksheet #6

1. Name the following compounds.

a.  $\text{SO}_2$  \_\_\_\_\_

b.  $\text{P}_2\text{O}_3$  \_\_\_\_\_

c.  $\text{Cl}_2\text{O}$  \_\_\_\_\_

d.  $\text{PO}$  \_\_\_\_\_

e.  $\text{CSe}_2$  \_\_\_\_\_

f.  $\text{S}_4\text{N}_2$  \_\_\_\_\_

g.  $\text{BF}_3$  \_\_\_\_\_

h.  $\text{PCl}_5$  \_\_\_\_\_

2. Predict the formula from the names.

a. chlorine dioxide \_\_\_\_\_

b. dichlorine monoxide \_\_\_\_\_

c. diphosphorus tetroxide \_\_\_\_\_

d. silicon dioxide \_\_\_\_\_

e. tetraphosphorus heptoxide \_\_\_\_\_

f. carbon tetrachloride \_\_\_\_\_



## Mixed Ionic/Covalent Compound Naming #7

*For each of the following questions, determine whether the compound is ionic or covalent and name it appropriately.*

- 1)  $\text{Na}_2\text{CO}_3$  \_\_\_\_\_
- 2)  $\text{P}_2\text{O}_5$  \_\_\_\_\_
- 3)  $\text{NH}_3$  \_\_\_\_\_ (a.k.a. ammonia)
- 4)  $\text{FeSO}_4$  \_\_\_\_\_
- 5)  $\text{SiO}_2$  \_\_\_\_\_
- 6)  $\text{GaCl}_3$  \_\_\_\_\_
- 7)  $\text{CoBr}_2$  \_\_\_\_\_
- 8)  $\text{B}_2\text{H}_4$  \_\_\_\_\_
- 9)  $\text{CO}$  \_\_\_\_\_

*For each of the following questions, determine whether the compound is ionic or covalent and write the appropriate formula for it.*

- 10) dinitrogen trioxide \_\_\_\_\_
- 11) lithium acetate \_\_\_\_\_
- 12) phosphorus trifluoride \_\_\_\_\_
- 13) vanadium (V) oxide \_\_\_\_\_
- 14) aluminum hydroxide \_\_\_\_\_
- 15) zinc sulfide \_\_\_\_\_
- 16) silicon tetrafluoride \_\_\_\_\_
- 17) silver phosphate \_\_\_\_\_

## Mixed Ionic/Covalent Compound Naming #8

Write the names of the following chemical compounds:

- 1)  $\text{BBr}_3$  \_\_\_\_\_
- 2)  $\text{CaSO}_4$  \_\_\_\_\_
- 3)  $\text{C}_2\text{Br}_6$  \_\_\_\_\_
- 4)  $\text{Cr}(\text{CO}_3)_3$  \_\_\_\_\_
- 5)  $\text{Ag}_3\text{P}$  \_\_\_\_\_
- 6)  $\text{IO}_2$  \_\_\_\_\_
- 7)  $\text{VO}_2$  \_\_\_\_\_
- 8)  $\text{PbS}$  \_\_\_\_\_
- 9)  $\text{CH}_4$  \_\_\_\_\_ (a.k.a. methane)
- 10)  $\text{N}_2\text{O}_3$  \_\_\_\_\_

Write the formulas of the following chemical compounds:

- 11) tetraphosphorus triselenide \_\_\_\_\_
- 12) potassium acetate \_\_\_\_\_
- 13) iron (II) phosphide \_\_\_\_\_
- 14) disilicon hexabromide \_\_\_\_\_
- 15) titanium (IV) nitrate \_\_\_\_\_
- 16) diselenium diiodide \_\_\_\_\_
- 17) copper (I) phosphate \_\_\_\_\_
- 18) gallium oxide \_\_\_\_\_
- 19) tetrasulfur dinitride \_\_\_\_\_

## Review– Naming Chemical Compounds #9

Name the following chemical compounds:

- 1) NaBr \_\_\_\_\_
- 2)  $\text{Ca}(\text{C}_2\text{H}_3\text{O}_2)_2$  \_\_\_\_\_
- 3)  $\text{P}_2\text{O}_5$  \_\_\_\_\_
- 4)  $\text{Ti}(\text{SO}_4)_2$  \_\_\_\_\_
- 5)  $\text{FePO}_4$  \_\_\_\_\_
- 6)  $\text{K}_3\text{N}$  \_\_\_\_\_
- 7)  $\text{SO}_2$  \_\_\_\_\_
- 8)  $\text{CuOH}$  \_\_\_\_\_
- 9)  $\text{Zn}(\text{NO}_2)_2$  \_\_\_\_\_
- 10)  $\text{V}_2\text{S}_3$  \_\_\_\_\_

Write the formulas for the following chemical compounds:

- 11) silicon dioxide \_\_\_\_\_
- 12) nickel (III) sulfide \_\_\_\_\_
- 13) manganese (II) phosphate \_\_\_\_\_
- 14) silver acetate \_\_\_\_\_
- 15) diboron tetrabromide \_\_\_\_\_
- 16) magnesium sulfate heptahydrate \_\_\_\_\_
- 17) potassium carbonate \_\_\_\_\_
- 18) ammonium oxide \_\_\_\_\_
- 19) tin (IV) selenide \_\_\_\_\_
- 20) carbon tetrachloride \_\_\_\_\_