

KEY

Nomenclature Worksheet 2: Simple Binary Ionic Compounds

Please complete the following table:

Name of Ionic Compound	Formula of Ionic Compound
1. Sodium bromide	NaBr
2. Calcium chloride	CaCl ₂
3. Magnesium sulfide	MgS
4. Aluminum oxide	Al ₂ O ₃
5. Lithium phosphide	Li ₃ P
6. Cesium nitride	Cs ₃ N
7. Potassium iodide	KI
8. Barium fluoride	BaF ₂
9. Rubidium nitride	Rb ₃ N
10. Barium oxide	BaO
11. Potassium Oxide	K ₂ O
12. Magnesium Iodide	MgI ₂
13. Aluminum chloride	AlCl ₃
14. Calcium bromide	CaBr ₂
15. Sodium Nitride	Na ₃ N
16. Lithium Fluoride	LiF
17. Barium Phosphide	Ba ₃ P ₂
18. Cesium Sulfide	Cs ₂ S
19. Strontium Fluoride	SrF ₂
20. Sodium chloride	NaCl

Nomenclature Worksheet 3: Ionic Compounds Containing Polyatomic Ions

Please complete the following table:

Name of Ionic Compound	Formula of Ionic Compound
1. Sodium chromate	Na ₂ CrO ₄
2. Calcium carbonate	CaCO ₃
3. Magnesium nitrate	Mg(NO ₃) ₂
4. Aluminum sulfate	Al ₂ (SO ₄) ₃
5. Lithium phosphate	Li ₃ (PO ₄)
6. Ammonium chloride	(NH ₄)Cl
7. Cesium chlorate	CsClO ₃
8. Potassium sulfate	K ₂ SO ₄
9. Barium acetate	Ba(C ₂ H ₃ O ₂) ₂
10. Rubidium cyanide	RbCN
11. Potassium acetate	KCH ₃ CO ₂
12. Magnesium phosphate	Mg ₃ (PO ₄) ₂
13. Aluminum chloride	Al(ClO ₃) ₃
14. Calcium sulfate	CaSO ₄
15. Strontium bicarbonate	Sr(HCO ₃) ₂
16. Sodium Nitrate	NaNO ₃
17. Lithium carbonate	Li ₂ CO ₃
18. Barium Nitrate	Ba(NO ₃) ₂
19. Cesium Chromate	Cs ₂ CrO ₄
20. Ammonium hydroxide	NH ₄ OH

Nomenclature Worksheet 4:
Ionic Compounds Containing Transition Metals

Please complete the following table:

Name of Ionic Compound	Formula of Ionic Compound
1. Copper (II) sulfate	$CuSO_4$
2. Copper (I) oxide	Cu_2O
3. Chromium (III) cyanide	$Cr(CN)_3$
4. Cobalt (II) hydroxide	$Co(OH)_2$
5. Silver bromide	$AgBr$
6. Zinc nitrate	$Zn(NO_3)_2$
7. Iron (III) acetate	$Fe(C_2H_3O_2)_3$
8. Lead (IV) sulfate	$Pb(SO_4)_2$
9. Iron (II) chloride	$FeCl_2$
10. Lead (II) sulfate	$PbSO_4$
11. Cobalt (III) carbonate	$Co_2(CO_3)_3$
12. Silver nitrate	$AgNO_3$
13. Zinc cyanide	$Zn(CN)_2$
14. Copper (I) chloride	$CuClO_3$
15. Chromium (II) hydroxide	$Cr(OH)_3$
16. Mercury (I) oxide	Hg_2O

Nomenclature Worksheet 6:
Binary Covalent Compounds

Please complete the following table:

Name of Covalent Compound	Formula of Covalent Compound
1. carbon dioxide	CO_2
2. phosphorus trichloride	PCl_3
3. sulfur dichloride	SCl_2
4. nitrogen trifluoride	NF_3
5. dioxygen difluoride	O_2F_2
dinitrogen tetrafluoride	N_2F_4
sulfur tetrachloride	SCl_4
chlorine trifluoride	ClF_3
silicon dioxide	SiO_2
tetraphosphorus decaoxide	P_4O_{10}

Determine whether the following compounds are covalent or ionic and give them their proper names.

1. $Ba(NO_3)_2$ Barium Nitrate
2. CO Carbon monoxide
3. PCl_3 Phosphorus trichloride
4. KI Potassium iodide
5. CF_4 Carbon tetrafluoride
6. MgO Magnesium oxide
7. Cu_2S Copper (I) sulfide
8. SO_2 Sulfur dioxide
9. NCl_3 Nitrogen trichloride
10. XeF_6 Xenon hexafluoride

MULTIVALENT COMPOUNDS

Name	Formula
1) HgCl_2 Mercury (II) Chloride	21) calcium bromide CaBr_2
2) Cu_3P_2 Copper (I) Phosphide	22) Chromium (VI) chloride CrCl_6
3) Na_3N Sodium Nitride	23) nickel(II) iodide NiI_2
4) FeCl_3 Iron (III) Chloride	24) Copper (II) sulfide CuS
5) SnBr_2 Tin (II) Bromide	25) Iron (III) oxide Fe_2O_3
6) SrO Strontium Oxide	26) lithium sulfide Li_2S
7) PbO Lead (II) Oxide	27) cesium nitride Cs_3N
8) Cu_2O Copper (I) Oxide	28) Lead (IV) oxide PbO_2
9) HgBr Mercury (I) Bromide	29) Rhodium (III) chloride RhCl_3
10) SnI_4 Tin (IV) Iodide	30) Mercury (I) nitride Hg_2N
11) CaCl_2 Calcium Chloride	31) manganese(II) oxide MnO
12) PbCl_4 Lead (IV) Chloride	32) Copper (I) iodide CuI
13) Au_2S Gold (I) Sulfide	33) Tin (IV) chloride SnCl_4
14) KI Potassium Iodide	34) Copper (II) bromide CuBr_2
15) ZrCl_4 Zirconium Chloride	35) tin(II) chloride SnCl_2
16) GaF_3 Gallium(III) Fluoride	36) Lead (II) iodide PbI_2
17) PbBr_2 Lead (II) Bromide	*37) hydrogen bromide HBr
18) Ca_3P_2 Calcium Phosphide	38) cobalt (II) sulfide CoS
19) FeP Iron (III) Phosphide	39) Iron (VI) oxide FeO_3
*20) H_2S * Hydrogen Sulfide HydroSulfuric acid	40) cobalt(II) chloride CoCl_2

Naming/Formulas Worksheet

Name _____ Per _____

- Left of the number: Identify if the compound is
BI = binary ionic, TI = ternary ionic, C = covalent/molecular, A = acids
- Does it need a Roman numeral??? If yes CIRCLE the question number
- Complete the name or balanced formula
- Write your name on the first name blank and your last name below the name blank.

28 1. $\text{Al}(\text{NO}_3)_3$	<u>Aluminum Nitrate</u>
MV 2. FeCl_3	<u>Iron(III) chloride</u>
C 3. CS_3	<u>Carbon trisulfide</u>
MV 4. TiO_2	<u>Titanium(IV) oxide</u>
A 5. H_2CO_3	<u>Carbonic acid</u>
MV 6. $\text{Cu}(\text{NO}_3)_2$	<u>Copper(II) nitrate</u>
MV 7. $\text{Sn}(\text{CN})_2$	<u>Tin(II) cyanide</u>
A 8. H_2SO_3	<u>Sulfurous acid</u>
C 9. N_2O_4	<u>dinitrogen peroxide tetroxide</u>
I 10. Ag_2SO_3	<u>Silver sulfite</u>
A 11. HBr	<u>hydrobromic acid</u>
C 12. P_2O_5	<u>Triphosphorus pentoxide</u>
MV 13. $\text{Sn}_3(\text{PO}_4)_2$	<u>Tin(II) phosphate</u>
C 14. N_2Cl_4	<u>heptanogen tetrachloride</u>
I 15. LiOH	<u>Lithium hydroxide</u>
MV 16. Manganese (III) bromide	<u>MnBr_3</u>
I 17. Calcium acetate	<u>$\text{Ca}(\text{C}_2\text{H}_3\text{O}_2)_2$</u>
C 18. Sulfur dioxide	<u>SO_2</u>
MV 19. Tin (IV) sulfate	<u>$\text{Sn}(\text{SO}_4)_2$</u>
A 20. Hydrobromic acid	<u>HBr</u>
MV 21. Lead (IV) nitride	<u>Pb_3N_4</u>
MV 22. Copper (II) Chlorate	<u>$\text{Cu}(\text{ClO}_3)_2$</u>
A 23. Sulfuric acid	<u>H_2SO_4</u>
I 24. Ammonium phosphate	<u>$(\text{NH}_4)_3\text{PO}_4$</u>
C 25. Diphosphorus pentabromide	<u>P_2Br_5</u>
I 26. Barium cyanide	<u>$\text{Ba}(\text{CN})_2$</u>
MV 27. Cobalt (VI) Chromate	<u>$\text{Co}(\text{CrO}_4)_3$</u>
I 28. Lithium nitrite	<u>LiNO_2</u>
A 29. Hypochlorous acid	<u>HClO</u>
I 30. Aluminum oxalate	<u>$\text{Al}_2(\text{C}_2\text{O}_4)_3$</u>

Naming Quiz: Ionic and Covalent (MAKE-UP)

Name _____ Per _____

- Left of the number: Identify if the compound is
BI = binary ionic, TI = ternary ionic, C = covalent/molecular
- Does it need a Roman numeral??? If yes CIRCLE the question number
- Complete the name or balanced formula

A 1. HBrO_3	<u>Bromic Acid</u>
MV 2. SnSO_3	<u>Tin(II) sulfite</u>
I 3. Na_3P	<u>Sodium phosphide</u>
C 4. N_2O_5	<u>dinitrogen pentoxide</u>
I 5. AlPO_4	<u>Aluminum phosphate</u>
MV 6. $\text{Fe}_2(\text{SO}_4)_3$	<u>Iron(III) sulfate</u>
A 7. H_2S	<u>hydrosulfuric acid</u>
C 8. PCl_3	<u>Phosphorus trichloride</u>
MV 9. $\text{Fe}(\text{C}_2\text{H}_3\text{O}_2)_2$	<u>Iron(II) acetate</u>
MV 10. CuNO_2	<u>Copper(I) nitrite</u>
MV 11. $\text{Cr}(\text{C}_2\text{O}_4)_3$	<u>Chromium oxalate</u>
C 12. SBr_4	<u>sulfur tetrabromide</u>
I 13. $\text{Mg}(\text{OH})_2$	<u>Magnesium hydroxide</u>
MV 14. $\text{Ni}(\text{CO})_3$	<u>Nickel(II) chloride</u>
MV 15. $\text{Pb}(\text{CrO}_4)_2$	<u>Lead(IV) chromate</u>
A 16. Hydroiodic acid	<u>HI</u>
I 17. Potassium hydroxide	<u>KOH</u>
C 18. Triphosphorus tetraiodide	<u>P_3I_4</u>
MV 19. Nickel (IV) carbonate	<u>$\text{Ni}(\text{CO}_3)_2$</u>
I 20. Barium acetate	<u>$\text{Ba}(\text{C}_2\text{H}_3\text{O}_2)_2$</u>
A 21. Perchloric acid	<u>HClO_4</u>
MV 22. Chromium (VI) dichromate	<u>$\text{Cr}_2(\text{Cr}_2\text{O}_7)_3$</u>
C 23. Disulfur heptoxide	<u>S_2O_7</u>
MV 24. Copper (II) nitride	<u>Cu_3N_2</u>
I 25. Zinc nitrate	<u>$\text{Zn}(\text{NO}_3)_2$</u>
MV 26. Lead (II) chloride	<u>$\text{Pb}(\text{ClO}_2)_2$</u>
C 27. Nitrogen pentoxide	<u>N_2O_5</u>
A 28. Nitrous acid	<u>HNO_3</u>
MV 29. Cobalt (VI) thiosulfate	<u>Co</u>
C 30. Disulfide pentabromide	<u>S_2Br_5</u>

Name KEY (You can either print this out, or write down **BOTH** columns)

1.	Iron (II) Nitrate	$\text{Fe}(\text{NO}_3)_2$
2.	Hydrosulfuric acid	H_2S
3.	Phosphoric acid	H_3PO_4
4.	Potassium bicarbonate	KHCO_3
5.	Copper (I) carbonate	Cu_2CO_3
6.	Ammonium Chloride	NH_4Cl
7.	Calcium Chlorate	$\text{Ca}(\text{ClO}_3)_2$
8.	Nitric acid	HNO_3
9.	Hypochlorous acid	HClO
10.	Iron (III) Sulfate	$\text{Fe}_2(\text{SO}_4)_3$
11.	Hydroiodic acid	HI
12.	Magnesium Phosphate	$\text{Mg}_3(\text{PO}_4)_2$
13.	hydrobromic acid	HBr
14.	Potassium Dichromate	$\text{K}_2(\text{Cr}_2\text{O}_7)$
15.	Sodium Chromate	$\text{Na}_2(\text{CrO}_4)$
16.	Calcium hydroxide	$\text{Ca}(\text{OH})_2$
17.	Aluminum Chloride	AlCl_3
18.	chlorous acid	HClO_2
19.	Copper (I) Sulfide	Cu_2S
20.	Sulfurous acid	H_2SO_3
21.	chlorous acid	HClO_2
22.	Magnesium Phosphide	Mg_3P_2