

Name: _____

1. NO_3^{-} _____

2. O_3^{2-} _____

3. CO_3^{2-} _____

4. PO_4^{3-} _____

5. OH^{-} _____

6. NH_4^{+} _____

7. ClO_3^{-} _____

8. CN^{-} _____

9. SO_4^{2-} _____

10. $\text{C}_2\text{H}_3\text{O}_2^{-}$ _____

Name: me

1. NO_3^{1-} nitrate ✗

2. O_2^{2-} peroxide

3. CO_3^{2-} carbonate ✗

4. PO_4^{3-} phosphate ✗

5. OH^{1-} hydroxide

6. NH_4^{1+} ammonium

7. ClO_3^{1-} chlorate ✗

8. CN^{1-} cyanide

9. SO_4^{2-} sulfate *

10. $\text{C}_2\text{H}_3\text{O}_2^{1-}$ acetate

-ide

perphosphate PO_5^{3-}

phosphate PO_4^{3-}

phosphite PO_3^{3-}

hypophosphite PO_2^{3-}

Homework Quiz (26-79) Name: _____

Name the following

Na_2SO_4 _____

$\text{Cu}(\text{NO}_3)_2$ _____

K_2O _____

N_2O_5 _____

Br_3Cl_2 _____

Write the formula for the following

magnesium fluoride _____

cobalt(III) acetate _____

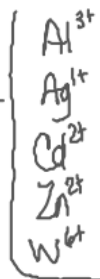
silver sulfide _____

lead(IV) oxide _____

dicarbon hepta chloride _____

26. Mg_3N_2 magnesium nitride
27. $Ca_3(PO_4)_2$ calcium phosphate
28. $Al_2(SO_4)_3$ aluminium sulfate
29. $(NH_4)Cl$ ammonium chloride
30. K_2O potassium oxide

31. Ag_2S silver sulfide
32. $Fe(NO_3)_3$ iron (III) nitrate NO_3^{1-}
33. $Ba(CO_3)$ barium carbonate
34. $Li_2(C_2O_4)$ lithium oxalate
35. CuI_2 copper (II) iodide



Write the formula for the following ionic compounds.

36. Calcium sulfide $2+ \quad 2- = 0$ CaS
37. Magnesium phosphide $2+ \quad 3-$ Mg₃P₂
38. Sodium sulfate $1+ \quad 2-$ Na₂(SO₄)
39. Potassium bicarbonate $1+ \quad 1-$ K(HCO₃)
40. Zinc bromide $2+ \quad 1-$ ZnBr₂
41. Barium phosphate $2+ \quad 3-$ Ba₃(PO₄)₂
42. Ammonium nitrite $1+ \quad 1-$ (NH₄)(NO₂)
43. Aluminium chloride $3+ \quad 1-$ AlCl₃
44. Cesium bromide $1+ \quad 1-$ CsBr
45. Potassium permanganate $1+ \quad 1-$ K(MnO₄)

Write the names for the following metallic compounds.

46. $CuCl$ copper (I) chloride
47. HgO mercury (II) oxide
48. Fe_2O_3 iron (III) oxide
49. Bi_2O_3 bismuth (III) oxide


Write the formula for the following metallic compounds.

50. Tin (IV) chloride $+4 \quad 1-$ SnCl₄
51. Cobalt (II) fluoride $+2 \quad 1-$ CoF₂
52. Chromium (II) sulfide $+2 \quad 2-$ CrS
53. Lead (II) sulfide $+2 \quad 2-$ PbS
54. Tin (II) bromide $+2 \quad 1-$ SnBr₂
55. Mercury (I) nitride $1+ \quad 3-$ Hg₃N
56. Iron (II) oxide $2+ \quad 2-$ FeO
57. Copper (II) hydroxide $2+ \quad 1-$ Cu(OH)₂
58. Iron (III) nitrate $3+ \quad 1-$ Fe(NO₃)₃
59. Copper (II) iodide $2+ \quad 1-$ CuI₂

Write the name for the following covalent compounds.

- | | | | |
|-----------------------------------|----------------------------------|------------------------------------|-------------------------------|
| 60. NO | <u>nitrogen monoxide</u> | 65. N ₂ O ₃ | <u>dinitrogen trioxide</u> |
| 61. P ₂ O ₅ | <u>diphosphorous pentoxide</u> | 66. S ₂ Br ₂ | <u>disulfur dibromide</u> |
| 62. PCl ₅ | <u>phosphorous pentachloride</u> | 67. CS ₂ | <u>carbon disulfide</u> |
| 63. IF ₇ | <u>iodine heptafluoride</u> | 68. ClF ₅ | <u>chlorine pentafluoride</u> |
| 64. CBr ₄ | <u>carbon tetrabromide</u> | 69. SO ₃ | <u>sulfur trioxide</u> |

Write the formula for the following covalent compounds.

- | | | | |
|------------------------------|-----------------------------------|---------------------------|-----------------------------------|
| 70. Sulfur trioxide | <u>SO₃</u> | 75. Sulfur hexafluoride | <u>SF₆</u> |
| 71. Phosphorous trioxide | <u>PO₃</u> | 76. Carbon disulfide | <u>CS₂</u> |
| 72. Dinitrogen pentoxide | <u>N₂O₅</u> | 77. Dinitrogen trioxide | <u>N₂O₃</u> |
| → 73. Oxygen dibromide | <u>OBr₂</u> | 78. Phosphorous pentoxide | <u>P₂O₅</u> |
| 74. Tetrasulfur tetranitride | <u>S₄N₄</u> | 79. Carbon dioxide | <u>CO₂</u> |
- 

V. Binary Inorganic Compounds (Acids)

Containing a hydrogen and a non-metal. Start with hydrogen then the -ide form of the non-metal. When this type of compound is in an aqueous solution it will form an acid, then state hydro for the hydrogen and add the suffix -ic to the non-metal.

An acid is a molecular substance that when dissolved in water produces hydrogen ions (H^+).

Ex. $HCl(aq)$ hydrochloric acid
 $H_2S(aq)$ hydrosulfuric acid



If the combination is hydrogen and a polyatomic ion change the -ate of the polyatomic ion to -ic.

Ex. $C_2H_3O_2^-$ acetate \rightarrow $HC_2H_3O_2$ acetic acid
 PO_4^{3-} phosphate \rightarrow H_3PO_4 phosphoric acid

VI. Ternary Compounds (Acids)

Chlorine, nitrogen, sulfur, phosphorus, and others form oxyacids. Oxyacids are ternary compounds with hydrogen and oxygen.

If the acid has the most oxygen then it has the suffix -ic.

If the acid has fewer oxygen then it has the suffix -ous.

If the acid has the greatest number of oxygen it has the prefix per-.

If the acid has the least number of oxygen it has the prefix hypo-.

Ex. $HClO_4$ Perchloric acid
 $HClO_3$ Chloric acid
 $HClO_2$ Chlorous acid
 $HClO$ Hypochlorous acid

? Is hydrogen attached & is it aqueous?

Yes its an acid

No name as an ionic compound

① Is a polyatomic Ion Present?

HYDRO

(TA)

YES

Focus on the name of the poly

No Binary Acid (BA)
Name: hydro___ic acid
Formula: H^+ + ___ (aq)
hydrofluoric acid
 $HF(aq)$
hydrophosphoric acid
 $H_3P(aq)$

-ATE
change
ate \rightarrow ic
 $H_2SO_4(aq)$
Sulfuric acid

-ITE
change
ite \rightarrow ous
 $H_2SO_3(aq)$
sulfurous acid

-IDE*
write hydro +
ic
 $HCN(aq)$
hydrocyanic
acid
exception

Practice:

- TA 1. $H(C_2H_3O_2)_{aq}$ acetic acid
- BA 2. $HF(aq)$ hydrofluoric acid
- BA 3. $HBr(aq)$ hydrobromic acid
- TA 4. $H_2SO_4(aq)$ sulfuric acid
- TA 5. ^{3-ate} phosphoric acid $H_3PO_4(aq)$
- BA 6. hydroiodic acid $HI(aq)$
- TA 7. ^{1-ite} chlorous acid $HClO_2(aq)$
- TA 8. ^{2-ate} carbonic acid $H_2CO_3(aq)$

VII. Hydrates

Compounds that contain water molecules weakly bound in their crystals. When the compound loses the water molecules it is referred to as anhydrous.

To name state the name of the binary compound and then list the number of water molecules attached.

Ex. Copper (II) sulfate is a white powdery substance. When associated with water $CuSO_4 \cdot 5 H_2O$ – copper (II) sulfate pentahydrate is a blue crystal.

Practice: Name the following compounds.

1. $Na_2CO_3 \cdot 10 H_2O$ sodium carbonate decahydrate
2. $BaCl_2 \cdot 2 H_2O$ _____
3. $CuSO_4 \cdot 5 H_2O$ _____

Practice: Write the formula for the following compounds.

1. Magnesium sulfate heptahydrate $MgSO_4 \cdot 7 H_2O$
2. Ferric nitrate trihydrate $Fe(NO_3)_3 \cdot 3 H_2O$
- Iron (III)
+3