

## Practice Exercises for Chemical Nomenclature

### I. Ionic Compounds with monatomic anions

- |                       |       |                           |       |
|-----------------------|-------|---------------------------|-------|
| 1. Ammonium Chloride  | _____ | 11. Potassium Phosphide   | _____ |
| 2. Potassium Iodide   | _____ | 12. Cesium Selenide       | _____ |
| 3. Silver Fluoride    | _____ | 13. Aluminum Nitride      | _____ |
| 4. Lead(II) Oxide     | _____ | 14. Zinc Oxide            | _____ |
| 5. Strontium Nitride  | _____ | 15. Lead(IV) Oxide        | _____ |
| 6. Copper(I) Bromide  | _____ | 16. Copper(II) Telluride  | _____ |
| 7. Tin(IV) Iodide     | _____ | 17. Tin(IV) Nitride       | _____ |
| 8. Magnesium Chloride | _____ | 18. Aluminum Carbide      | _____ |
| 9. Aluminum Fluoride  | _____ | 19. Rubidium Iodide       | _____ |
| 10. Iron(III) Sulfide | _____ | 20. Tungsten(II) Chloride | _____ |

### II. Ionic compounds with simple root polyatomic anions:

- |                          |       |                           |       |
|--------------------------|-------|---------------------------|-------|
| 1. Potassium chlorate    | _____ | 11. Iron(III) cyanide     | _____ |
| 2. Copper(I) phosphate   | _____ | 12. Sodium Iodate         | _____ |
| 3. Iron(III) bromate     | _____ | 13. Potassium Peroxide    | _____ |
| 4. Lithium Phosphate     | _____ | 14. Tin(IV) Dichromate    | _____ |
| 5. Ammonium Hydroxide    | _____ | 15. Silver nitrate        | _____ |
| 6. Cobalt(III) Carbonate | _____ | 16. Calcium Sulfate       | _____ |
| 7. Iron(II) Chromate     | _____ | 17. Zinc Phosphate        | _____ |
| 8. Lithium Acetate       | _____ | 18. Lead(II) Permanganate | _____ |
| 9. Calcium Thiosulfate   | _____ | 19. Aluminum Silicate     | _____ |
| 10. Aluminum Oxalate     | _____ | 20. Calcium Nitrate       | _____ |

### III. Ionic Compounds with Polyatomic Anions based on the simple root anions.

- |                                    |       |                            |       |
|------------------------------------|-------|----------------------------|-------|
| 1. Iron(III) Sulfite               | _____ | 11. Barium periodate       | _____ |
| 2. Lead(II) Monohydrogen Phosphate | _____ | 12. Lead(IV) Bromite       | _____ |
| 3. Rubidium hypochlorite           | _____ | 13. Silver Bicarbonate     | _____ |
| 4. Lithium Hydrogen Carbonate      | _____ | 14. Mercury(I) phosphite   | _____ |
| 5. Zinc persulfate                 | _____ | 15. Copper(II) hypobromite | _____ |
| 6. Strontium Nitrite               | _____ | 16. Sodium Nitrite         | _____ |
| 7. Ammonium Hydrogen Sulfate       | _____ | 17. Potassium chromate     | _____ |
| 8. Tin(IV) perchlorate             | _____ | 18. Cadmium Chlorite       | _____ |
| 9. Copper(I) dihydrogen phosphate  | _____ | 19. Iron(II) hyponitrite   | _____ |
| 10. Aluminum nitrite               | _____ | 20. Calcium Bisulfite      | _____ |

#### IV. Cations with -ous or -ic endings

- |                                     |       |                          |       |
|-------------------------------------|-------|--------------------------|-------|
| 1. Cupric permanganate              | _____ | 11. Ferric chromate      | _____ |
| 2. Ferrous iodide                   | _____ | 12. Plumbous hypobromite | _____ |
| 3. Manganous bicarbonate            | _____ | 13. Manganic chloride    | _____ |
| 4. Chromic perchlorate              | _____ | 14. Cuprous Oxide        | _____ |
| 5. Nickelous monohydrogen phosphate | _____ | 15. Chromous Phosphide   | _____ |
| 6. Stannous sulfate                 | _____ | 16. Stannic dichromate   | _____ |
| 7. Cobaltic oxalate                 | _____ | 17. Nickelic oxide       | _____ |
| 8. Ferrous sulfide                  | _____ | 18. Plumbic iodate       | _____ |
| 9. Cupric nitrate                   | _____ | 19. Cobaltous sulfite    | _____ |
| 10. Mercurous nitrite               | _____ | 20. Mercuric bromide     | _____ |

#### V. Molecular compounds using Greek prefixes

- |                                      |       |                               |       |
|--------------------------------------|-------|-------------------------------|-------|
| 1. dichlorine monoxide               | _____ | 11. silicon dioxide           | _____ |
| 2. diphosphorus hexachloridehexoxide | _____ | 12. sulfur dioxide            | _____ |
| 3. sulfur trioxide                   | _____ | 13. dichlorine trioxide       | _____ |
| 4. carbon dioxide                    | _____ | 14. diphosphorus pentoxide    | _____ |
| 5. phosphorous trichloride           | _____ | 15. carbon monoxide           | _____ |
| 6. carbon tetrafluoride              | _____ | 16. dinitrogen monoxide       | _____ |
| 7. dinitrogen tetroxide              | _____ | 17. dichlorine pentoxide      | _____ |
| 8. diphosphorus trioxide             | _____ | 18. phosphorous pentachloride | _____ |
| 9. dichlorine heptaoxide             | _____ | 19. carbon disulfide          | _____ |
| 10. nitrogen dioxide                 | _____ | 20. dinitrogen trioxide       | _____ |

#### VI. Molecular Compounds using Stock System (Roman Numerals)

- |                            |       |                            |       |
|----------------------------|-------|----------------------------|-------|
| 1. sulfur(VI) oxide        | _____ | 11. carbon(II) sulfide     | _____ |
| 2. Chlorine(V) oxide       | _____ | 12. Carbon(IV) bromide     | _____ |
| 3. phosphorous(V) chloride | _____ | 13. sulfur(IV) oxide       | _____ |
| 4. nitrogen(I) oxide       | _____ | 14. Carbon(IV) oxide       | _____ |
| 5. Phosphorous(III) Oxide  | _____ | 15. nitrogen(V) oxide      | _____ |
| 6. iodine(VII) chloride    | _____ | 16. silicon(IV) oxide      | _____ |
| 7. Carbon(II) oxide        | _____ | 17. Nitrogen(III) chloride | _____ |
| 8. chlorine(III) fluoride  | _____ | 18. Chlorine(II) oxide     | _____ |
| 9. nitrogen(II) oxide      | _____ | 19. Silicon(IV) oxide      | _____ |
| 10. Bromine(III) oxide     | _____ | 20. Carbon(IV) chloride    | _____ |

## VII. Naming Acids

- |                       |       |                          |       |
|-----------------------|-------|--------------------------|-------|
| 1. Nitric Acid        | _____ | 11. Hypobromous Acid     | _____ |
| 2. Perchloric Acid    | _____ | 12. Hydrophosphoric Acid | _____ |
| 3. Sulfuric Acid      | _____ | 13. Chlorous Acid        | _____ |
| 4. Hypochlorous Acid  | _____ | 14. Hydrofluoric Acid    | _____ |
| 5. Bromous Acid       | _____ | 15. Hydrochloric Acid    | _____ |
| 6. Hydrosulfuric Acid | _____ | 16. Periodic Acid        | _____ |
| 7. Hydrobromic Acid   | _____ | 17. Nitrous Acid         | _____ |
| 8. Chloric Acid       | _____ | 18. Carbonic Acid        | _____ |
| 9. Phosphoric Acid    | _____ | 19. Hydrotelluric Acid   | _____ |
| 10. Sulfurous Acid    | _____ | 20. Iodic Acid           | _____ |

## VIII. Hydrates

- |                                     |       |
|-------------------------------------|-------|
| 1. Calcium Chloride dihydrate       | _____ |
| 2. Magnesium Sulfate heptahydrate   | _____ |
| 3. Barium Chloride trihydrate       | _____ |
| 4. Ferric Nitrate pentahydrate      | _____ |
| 5. Copper(II) Chloride tetrahydrate | _____ |

Part IX. Ionic Compounds with monatomic anions

- |              |       |               |       |
|--------------|-------|---------------|-------|
| 1. $K_2Se$   | _____ | 11. $NH_4F$   | _____ |
| 2. $Cs_3N$   | _____ | 12. $KCl$     | _____ |
| 3. $Al_2O_3$ | _____ | 13. $Ag_2O$   | _____ |
| 4. $ZnTe$    | _____ | 14. $Pb_3N_2$ | _____ |
| 5. $Pb_3N_4$ | _____ | 15. $SrBr_2$  | _____ |
| 6. $CuO$     | _____ | 16. $CuI$     | _____ |
| 7. $SnC$     | _____ | 17. $SnCl_4$  | _____ |
| 8. $AlI_3$   | _____ | 18. $MgF_2$   | _____ |
| 9. $RbCl$    | _____ | 19. $Al_2S_3$ | _____ |
| 10. $WI_2$   | _____ | 20. $FeP$     | _____ |

Part X. Ionic Compounds with Simple Root polyatomic ions

- |                   |       |                       |       |
|-------------------|-------|-----------------------|-------|
| 1. $Fe(IO_3)_3$   | _____ | 11. $K_3PO_4$         | _____ |
| 2. $Na_2O_2$      | _____ | 12. $CuBrO_3$         | _____ |
| 3. $K_2Cr_2O_7$   | _____ | 13. $FePO_4$          | _____ |
| 4. $Sn(NO_3)_4$   | _____ | 14. $LiOH$            | _____ |
| 5. $Ag_2SO_4$     | _____ | 15. $(NH_4)_2CO_3$    | _____ |
| 6. $Ca_3(PO_4)_2$ | _____ | 16. $Co_2(CrO_4)_3$   | _____ |
| 7. $Zn(MnO_4)_2$  | _____ | 17. $Fe(C_2H_3O_2)_2$ | _____ |
| 8. $PbSiO_3$      | _____ | 18. $Li_2S_2O_3$      | _____ |
| 9. $Al(NO_3)_3$   | _____ | 19. $CaC_2O_4$        | _____ |
| 10. $Ca(ClO_3)_2$ | _____ | 20. $Al(CN)_3$        | _____ |

Part XI. Ionic Compounds with Polyatomic Anions based on the simple root anions.

- |                   |       |                     |       |
|-------------------|-------|---------------------|-------|
| 1. $Ba(BrO_2)_2$  | _____ | 11. $Fe_2(HPO_4)_3$ | _____ |
| 2. $Pb(HCO_3)_2$  | _____ | 12. $Pb(ClO)_2$     | _____ |
| 3. $Ag_3PO_3$     | _____ | 13. $RbHCO_3$       | _____ |
| 4. $Hg_2(HbrO)_2$ | _____ | 14. $Zn(NO_2)_2$    | _____ |
| 5. $Cu(NO_2)_2$   | _____ | 15. $SrHSO_4$       | _____ |
| 6. $Na_2CrO_4$    | _____ | 16. $Li_2SO_5$      | _____ |
| 7. $KClO_2$       | _____ | 17. $NH_4ClO_4$     | _____ |
| 8. $Cd(HNO)_2$    | _____ | 18. $Sn(H_2PO_4)_4$ | _____ |
| 9. $FeHSO_3$      | _____ | 19. $CuNO_2$        | _____ |
| 10. $CaSO_3$      | _____ | 20. $Al(IO_4)_3$    | _____ |

Part XII. Cations with -ous or -ic endings

- |   |       |  |       |
|---|-------|--|-------|
| 1. Fe(HbrO) <sub>3</sub>  | _____ | 11. CuI <sub>3</sub>                                 | _____ |
| 2. PbCl <sub>2</sub>  | _____ | 12. Fe(HCO <sub>3</sub> ) <sub>2</sub>               | _____ |
| 3. Mn <sub>2</sub> O <sub>3</sub>                                 | _____ | 13. Mn(ClO <sub>4</sub> ) <sub>2</sub>               | _____ |
| 4. Cu <sub>3</sub> PO <sub>4</sub>                                | _____ | 14. Cr <sub>2</sub> (HPO <sub>4</sub> ) <sub>3</sub> | _____ |
| 5. CrO  | _____ | 15. NiSO <sub>4</sub>                                | _____ |
| 6. Sn(IO <sub>3</sub> ) <sub>4</sub>                              | _____ | 16. SnC <sub>2</sub> O <sub>4</sub>                  | _____ |
| 7. Ni <sub>2</sub> (Cr <sub>2</sub> O <sub>7</sub> ) <sub>3</sub> | _____ | 17. Co <sub>2</sub> S <sub>3</sub>                   | _____ |
| 8. Pb(SO <sub>3</sub> ) <sub>4</sub>                              | _____ | 18. Fe(NO <sub>3</sub> ) <sub>2</sub>                | _____ |
| 9. CoBr <sub>2</sub>  | _____ | 19. Cu(NO <sub>2</sub> ) <sub>2</sub>                | _____ |
| 10. Hg(MnO <sub>4</sub> ) <sub>2</sub>                            | _____ | 20. Hg <sub>2</sub> CrO <sub>4</sub>                 | _____ |

Part XIII. Molecular Compounds using Greek Prefixes

- |                                   |       |                                     |       |
|-----------------------------------|-------|-------------------------------------|-------|
| 1. SiO <sub>3</sub>               | _____ | 11. Cl <sub>2</sub> O <sub>7</sub>  | _____ |
| 2. SO <sub>3</sub>                | _____ | 12. P <sub>2</sub> Cl <sub>10</sub> | _____ |
| 3. Cl <sub>2</sub> O <sub>5</sub> | _____ | 13. SO <sub>2</sub>                 | _____ |
| 4. P <sub>2</sub> O <sub>3</sub>  | _____ | 14. CO                              | _____ |
| 5. CO <sub>2</sub>                | _____ | 15. PCl <sub>5</sub>                | _____ |
| 6. N <sub>2</sub> O <sub>4</sub>  | _____ | 16. CS <sub>2</sub>                 | _____ |
| 7. Cl <sub>2</sub> O              | _____ | 17. N <sub>2</sub> O <sub>5</sub>   | _____ |
| 8. PCl <sub>3</sub>               | _____ | 18. P <sub>2</sub> O <sub>3</sub>   | _____ |
| 9. CBr <sub>4</sub>               | _____ | 19. Cl <sub>2</sub> O <sub>3</sub>  | _____ |
| 10. N <sub>2</sub> O              | _____ | 20. NO                              | _____ |

Part XIV. Molecular Compounds using Stock Sytem (Roman Numerals)

- |                                   |       |                                    |       |
|-----------------------------------|-------|------------------------------------|-------|
| 1. SiS <sub>2</sub>               | _____ | 11. SiO <sub>2</sub>               | _____ |
| 2. CF <sub>4</sub>                | _____ | 12. Cl <sub>2</sub> O <sub>3</sub> | _____ |
| 3. SO <sub>3</sub>                | _____ | 13. PCl <sub>3</sub>               | _____ |
| 4. CO                             | _____ | 14. N <sub>2</sub> O <sub>3</sub>  | _____ |
| 5. N <sub>2</sub> O               | _____ | 15. ICl <sub>5</sub>               | _____ |
| 6. SO <sub>2</sub>                | _____ | 16. OCl <sub>5</sub>               | _____ |
| 7. NCl <sub>5</sub>               | _____ | 17. CO <sub>2</sub>                | _____ |
| 8. Cl <sub>2</sub> O <sub>5</sub> | _____ | 18. ClF <sub>7</sub>               | _____ |
| 9. OF <sub>2</sub>                | _____ | 19. N <sub>2</sub> O               | _____ |
| 10. CBr <sub>4</sub>              | _____ | 20. BrCl <sub>5</sub>              | _____ |

Part XV. Naming Acids

1.  $\text{H}_3\text{PO}_4$  \_\_\_\_\_
2.  $\text{HClO}_4$  \_\_\_\_\_
3.  $\text{H}_2\text{SO}_4$  \_\_\_\_\_
4.  $\text{H}_2\text{Te}$  \_\_\_\_\_
5.  $\text{HBrO}_3$  \_\_\_\_\_
6.  $\text{H}_2\text{S}$  \_\_\_\_\_
7.  $\text{HNO}_3$  \_\_\_\_\_
8.  $\text{HClO}_3$  \_\_\_\_\_
9.  $\text{HBr}$  \_\_\_\_\_
10.  $\text{H}_2\text{SO}_3$  \_\_\_\_\_

11.  $\text{HbrO}$  \_\_\_\_\_
12.  $\text{H}_3\text{P}$  \_\_\_\_\_
13.  $\text{HClO}_2$  \_\_\_\_\_
14.  $\text{H}_2\text{CO}_3$  \_\_\_\_\_
15.  $\text{HCl}$  \_\_\_\_\_
16.  $\text{HIO}_3$  \_\_\_\_\_
17.  $\text{HNO}_2$  \_\_\_\_\_
18.  $\text{HIO}_2$  \_\_\_\_\_
19.  $\text{HClO}$  \_\_\_\_\_
20.  $\text{HF}$  \_\_\_\_\_