

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

Chem 10, Section: \_\_\_\_\_

[Individual exercise]

Exercise Date: \_\_\_\_\_

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### Chemical Nomenclature

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Write the names and formulas for the following inorganic compounds in the spaces provided.

#### Part 1: Ions and Ionic Compounds

Write formulas/charges or names as appropriate for each of the following monatomic ions.

- |                     |       |                      |       |
|---------------------|-------|----------------------|-------|
| 1. Calcium ion      | _____ | 6. $\text{Ag}^+$     | _____ |
| 2. Phosphide ion    | _____ | 7. $\text{Rb}^+$     | _____ |
| 3. Iodide ion       | _____ | 8. $\text{Pb}^{4+}$  | _____ |
| 4. Gallium ion      | _____ | 9. $\text{S}^{2-}$   | _____ |
| 5. Titanium(IV) ion | _____ | 10. $\text{Cr}^{2+}$ | _____ |

Write formulas or names as appropriate for each of the following ionic compounds.

- |                           |       |                                 |       |
|---------------------------|-------|---------------------------------|-------|
| 1. Magnesium nitride      | _____ | 6. $\text{SrI}_2$               | _____ |
| 2. Lithium oxide          | _____ | 7. $\text{Ba}_3(\text{PO}_4)_2$ | _____ |
| 3. Aluminum sulfite       | _____ | 8. $(\text{NH}_4)_2\text{S}$    | _____ |
| 4. Copper(II) bicarbonate | _____ | 9. $\text{Fe}(\text{ClO})_3$    | _____ |
| 5. Sodium nitrate         | _____ | 10. $\text{ZnCrO}_4$            | _____ |

#### Part 2: Covalent Compounds

Write formulas or names as appropriate for each of the following covalent compounds.

- |                             |       |                              |       |
|-----------------------------|-------|------------------------------|-------|
| 1. Dichlorine monoxide      | _____ | 6. $\text{AsI}_3$            | _____ |
| 2. Disulfur dichloride      | _____ | 7. $\text{P}_4\text{O}_{10}$ | _____ |
| 3. Carbon tetrafluoride     | _____ | 8. $\text{Cl}_2\text{O}_7$   | _____ |
| 4. Phosphorus pentachloride | _____ | 9. $\text{SeCl}_6$           | _____ |
| 5. Nitrogen tribromide      | _____ | 10. $\text{NO}$              | _____ |

#### Part 3: Acids

Write formulas or names as appropriate for each of the following acids.

- |                    |       |   |       |
|--------------------|-------|---|-------|
| 1. Hydroiodic acid | _____ | 6. $\text{HCN}(\text{aq})$                      | _____ |
| 2. Carbonic acid   | _____ | 7. $\text{H}_2\text{C}_2\text{O}_4(\text{s})$   | _____ |
| 3. Chlorous acid   | _____ | 8. $\text{HNO}_2(\text{aq})$                    | _____ |
| 4. Sulfuric acid   | _____ | 9. $\text{H}_2\text{Cr}_2\text{O}_7(\text{aq})$ | _____ |
| 5. Sulfurous acid  | _____ | 10. $\text{HMnO}_4(\text{aq})$                  | _____ |

#### Part 4: Hydrates

Write formulas or names as appropriate for each of the following hydrates.

- Magnesium sulfate heptahydrate \_\_\_\_\_
- Copper(I) sulfate pentahydrate \_\_\_\_\_
- Potassium phosphate decahydrate \_\_\_\_\_
- Calcium chloride hexahydrate \_\_\_\_\_
- Iron(III) nitrate nonahydrate \_\_\_\_\_
- $\text{CoSO}_4 \cdot \text{H}_2\text{O}$  \_\_\_\_\_
- $\text{Na}_2\text{CrO}_4 \cdot 4\text{H}_2\text{O}$  \_\_\_\_\_
- $\text{CuF}_2 \cdot 2\text{H}_2\text{O}$  \_\_\_\_\_
- $\text{Sr}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$  \_\_\_\_\_
- $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$  \_\_\_\_\_

#### Part 5: Nomenclature of Ionic Compounds, Covalent Compounds and Acids

	Classification	Name or Formula
1. $\text{C}_3\text{O}_2$		
2. $\text{IF}_7$		
3. $\text{Rb}_2\text{CO}_3$		
4. $\text{SnS}_2$		
5. $\text{Au}(\text{CN})_3$		
6. $\text{H}_2\text{CrO}_4$ (aq)		
7. $\text{CBr}_4$ (aq)		
8. $\text{Li}_3\text{PO}_4$		
9. $\text{Mg}_3\text{N}_2$		
10. $\text{Ti}(\text{C}_2\text{H}_3\text{O}_2)_4$		
11. $\text{Fe}_2\text{O}_3$		
12. $\text{NaH}$		
13. $\text{Br}_3\text{O}_8$		
14. $\text{MnS}_2\text{O}_3$		
15. $\text{NH}_4\text{NO}_2$		
16. $\text{Cd}(\text{ClO}_2)_2$		
17. $\text{Ba}(\text{HSO}_3)_2$		
18. $\text{Cu}_2\text{O}$		
19. $\text{NiBr}_3$		
20. $\text{Sr}(\text{OH})_2$		
21. Perchloric acid		
22. Potassium permanganate		
23. Calcium hydride		
24. Vanadium(II) bicarbonate		
25. Bismuth(V) nitrate		
26. Rubidium peroxide		
27. Strontium hydrogen phosphite		
28. Hydrofluoric acid		
29. Chromium(III) thiocyanate		
30. Acetic acid		

31. Molybdenum(IV) carbonate		
32. Tetraiodine nonaoxide		
33. Diphosphorus tetrafluoride		
34. Aluminum sulfate		
35. Ammonium hydroxide		
36. Sodium dichromate		
37. Carbon disulfide		
38. Nickel(II) oxalate		
39. Barium selenide		
40. Silver bisulfate		

### Questions

1. How are the following types of compounds recognized from their *formulas*?

Ionic \_\_\_\_\_

Covalent \_\_\_\_\_

Acid \_\_\_\_\_

2. When do *parentheses* appear in the formulas of ionic compounds?

3. Do *Roman Numerals* appear in the names of ionic or covalent compounds? Explain why they are used.

4. Do *Greek Prefixes* appear in the names of ionic or covalent compounds? Explain why they are used.

5. What is the relationship between the number of hydrogens in an acid and the charge on the anion that they are combined with?