

This is a sample quiz providing examples of nomenclature. Answers are provided at the end of this handout. *Good luck!*

---

Provide names or formulas for the following compounds:

|                          |                        |                           |
|--------------------------|------------------------|---------------------------|
| nitrogen trifluoride     | nitrogen monoxide      | nitrogen dioxide          |
| dinitrogen tetroxide     | dinitrogen monoxide    | phosphorus trichloride    |
| phosphorus pentachloride | sulfur hexafluoride    | disulfur decafluoride     |
| xenon tetrafluoride      | $\text{CCl}_4$         | $\text{P}_4\text{O}_{10}$ |
| $\text{ClF}_3$           | $\text{BCl}_3$         | $\text{SF}_4$             |
| $\text{HBr(g)}$          | $\text{N}_2\text{F}_2$ | $\text{XeF}_3$            |

|               |                |                         |
|---------------|----------------|-------------------------|
| $\text{PI}_3$ | $\text{SCl}_2$ | $\text{S}_2\text{Cl}_2$ |
| $\text{OF}_2$ | $\text{NCl}_3$ | $\text{AsCl}_5$         |

# Nomenclature

## Self Quiz

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

Lab Section: \_\_\_\_\_

This is a sample quiz providing examples of nomenclature. Answers are provided at the end of this handout. *Good luck!*

Provide a formula for the following combinations of cation and anion:

|                    | $\text{Cl}^-$ | $\text{NO}_3^-$ | $\text{S}^{2-}$ | $\text{CO}_3^{2-}$ | $\text{N}^{3-}$ | $\text{PO}_4^{3-}$ | $\text{OH}^-$ |
|--------------------|---------------|-----------------|-----------------|--------------------|-----------------|--------------------|---------------|
| $\text{Na}^+$      |               |                 |                 |                    |                 |                    |               |
| $\text{NH}_4^+$    |               |                 |                 |                    |                 |                    |               |
| $\text{Sn}^{2+}$   |               |                 |                 |                    |                 |                    |               |
| $\text{Hg}_2^{2+}$ |               |                 |                 |                    |                 |                    |               |
| $\text{Al}^{3+}$   |               |                 |                 |                    |                 |                    |               |
| $\text{Sn}^{4+}$   |               |                 |                 |                    |                 |                    |               |

Provide the formula and name for the following combinations of cations and anions:

| Cation           | Anion                              | Formula | Name |
|------------------|------------------------------------|---------|------|
| $\text{Cu}^{2+}$ | $\text{OH}^-$                      |         |      |
| $\text{Ba}^{2+}$ | $\text{SO}_4^{2-}$                 |         |      |
| $\text{NH}_4^+$  | $\text{Cr}_2\text{O}_7^{2-}$       |         |      |
| $\text{Ag}^+$    | $\text{C}_2\text{H}_3\text{O}_2^-$ |         |      |
| $\text{Fe}^{3+}$ | $\text{S}^{2-}$                    |         |      |

Provide names and/or formulas for the following:

| Formula                             | Name |
|-------------------------------------|------|
| HCl(aq)                             |      |
| HBrO <sub>2</sub> (aq)              |      |
| H <sub>2</sub> SO <sub>4</sub> (aq) |      |
| HNO <sub>2</sub> (aq)               |      |
| HIO(aq)                             |      |
| HIO <sub>4</sub> (aq)               |      |
| NaOH                                |      |
| LiOH                                |      |
| NH <sub>4</sub> OH                  |      |
| Mg(OH) <sub>2</sub>                 |      |

| Formula | Name                |
|---------|---------------------|
|         | hydrobromic acid    |
|         | chlorous acid       |
|         | sulfurous acid      |
|         | hydrosulfuric acid  |
|         | nitric acid         |
|         | phosphoric acid     |
|         | phosphorous acid    |
|         | potassium hydroxide |
|         | calcium hydroxide   |
|         | dihydrogen monoxide |

Nomenclature *Self Quiz* - **ANSWERS APPEAR IN BOLD**

|                                                                   |                                                                   |                                                                        |
|-------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------------|
| nitrogen trifluoride<br><br><b>NF<sub>3</sub></b>                 | nitrogen monoxide<br><br><b>NO</b>                                | nitrogen dioxide<br><br><b>NO<sub>2</sub></b>                          |
| dinitrogen tetroxide<br><br><b>N<sub>2</sub>O<sub>4</sub></b>     | dinitrogen monoxide<br><br><b>N<sub>2</sub>O</b>                  | phosphorus trichloride<br><br><b>PCl<sub>3</sub></b>                   |
| phosphorus pentachloride<br><br><b>PCl<sub>5</sub></b>            | sulfur hexafluoride<br><br><b>SF<sub>6</sub></b>                  | disulfur decafluoride<br><br><b>S<sub>2</sub>F<sub>10</sub></b>        |
| xenon tetrafluoride<br><br><b>XeF<sub>4</sub></b>                 | CCl <sub>4</sub><br><br><b>carbon tetrachloride</b>               | P <sub>4</sub> O <sub>10</sub><br><br><b>tetraphosphorus decaoxide</b> |
| ClF <sub>3</sub><br><br><b>chlorine trifluoride</b>               | BCl <sub>3</sub><br><br><b>boron trichloride</b>                  | SF <sub>4</sub><br><br><b>sulfur tetrafluoride</b>                     |
| HBr(g)<br><br><b>hydrogen monobromide</b><br><i>(not an acid)</i> | N <sub>2</sub> F <sub>2</sub><br><br><b>dinitrogen difluoride</b> | XeF <sub>3</sub><br><br><b>xenon trifluoride</b>                       |

|                                                  |                                                   |                                                           |
|--------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------|
| $\text{PI}_3$<br><br><b>phosphorus triiodide</b> | $\text{SCl}_2$<br><br><b>sulfur dichloride</b>    | $\text{S}_2\text{Cl}_2$<br><br><b>disulfur dichloride</b> |
| $\text{OF}_2$<br><br><b>oxygen difluoride</b>    | $\text{NCl}_3$<br><br><b>nitrogen trichloride</b> | $\text{AsCl}_5$<br><br><b>arsenic pentachloride</b>       |

### Nomenclature *Self Quiz* - ANSWERS APPEAR IN BOLD

Provide a formula for the following combinations of cation and anion:

|                    | $\text{Cl}^-$                       | $\text{NO}_3^-$                                   | $\text{S}^{2-}$                      | $\text{CO}_3^{2-}$                                | $\text{N}^{3-}$                                  | $\text{PO}_4^{3-}$                                              | $\text{OH}^-$                         |
|--------------------|-------------------------------------|---------------------------------------------------|--------------------------------------|---------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------|---------------------------------------|
| $\text{Na}^+$      | <b>NaCl</b>                         | <b>NaNO<sub>3</sub></b>                           | <b>Na<sub>2</sub>S</b>               | <b>Na<sub>2</sub>CO<sub>3</sub></b>               | <b>Na<sub>3</sub>N</b>                           | <b>Na<sub>3</sub>PO<sub>4</sub></b>                             | <b>NaOH</b>                           |
| $\text{NH}_4^+$    | <b>NH<sub>4</sub>Cl</b>             | <b>NH<sub>4</sub>NO<sub>3</sub></b>               | <b>(NH<sub>4</sub>)<sub>2</sub>S</b> | <b>(NH<sub>4</sub>)<sub>2</sub>CO<sub>3</sub></b> | <b>(NH<sub>4</sub>)<sub>3</sub>N</b>             | <b>(NH<sub>4</sub>)<sub>3</sub>PO<sub>4</sub></b>               | <b>NH<sub>4</sub>OH</b>               |
| $\text{Sn}^{2+}$   | <b>SnCl<sub>2</sub></b>             | <b>Sn(NO<sub>3</sub>)<sub>2</sub></b>             | <b>SnS</b>                           | <b>SnCO<sub>3</sub></b>                           | <b>Sn<sub>3</sub>N<sub>2</sub></b>               | <b>Sn<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub></b>               | <b>Sn(OH)<sub>2</sub></b>             |
| $\text{Hg}_2^{2+}$ | <b>Hg<sub>2</sub>Cl<sub>2</sub></b> | <b>Hg<sub>2</sub>(NO<sub>3</sub>)<sub>2</sub></b> | <b>Hg<sub>2</sub>S</b>               | <b>Hg<sub>2</sub>CO<sub>3</sub></b>               | <b>(Hg<sub>2</sub>)<sub>3</sub>N<sub>2</sub></b> | <b>(Hg<sub>2</sub>)<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub></b> | <b>Hg<sub>2</sub>(OH)<sub>2</sub></b> |
| $\text{Al}^{3+}$   | <b>AlCl<sub>3</sub></b>             | <b>Al(NO<sub>3</sub>)<sub>3</sub></b>             | <b>Al<sub>2</sub>S<sub>3</sub></b>   | <b>Al<sub>2</sub>(CO<sub>3</sub>)<sub>3</sub></b> | <b>AlN</b>                                       | <b>AlPO<sub>4</sub></b>                                         | <b>Al(OH)<sub>3</sub></b>             |
| $\text{Sn}^{4+}$   | <b>SnCl<sub>4</sub></b>             | <b>Sn(NO<sub>3</sub>)<sub>4</sub></b>             | <b>SnS<sub>2</sub></b>               | <b>Sn(CO<sub>3</sub>)<sub>2</sub></b>             | <b>Sn<sub>3</sub>N<sub>4</sub></b>               | <b>Sn<sub>3</sub>(PO<sub>4</sub>)<sub>4</sub></b>               | <b>Sn(OH)<sub>4</sub></b>             |

Provide the formula and name for the following combinations of cations and anions:

| Cation           | Anion                              | Formula                                                        | Name                        |
|------------------|------------------------------------|----------------------------------------------------------------|-----------------------------|
| $\text{Cu}^{2+}$ | $\text{OH}^-$                      | <b>Cu(OH)<sub>2</sub></b>                                      | <b>copper(II) hydroxide</b> |
| $\text{Ba}^{2+}$ | $\text{SO}_4^{2-}$                 | <b>BaSO<sub>4</sub></b>                                        | <b>barium sulfate</b>       |
| $\text{NH}_4^+$  | $\text{Cr}_2\text{O}_7^{2-}$       | <b>(NH<sub>4</sub>)<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub></b> | <b>ammonium dichromate</b>  |
| $\text{Ag}^+$    | $\text{C}_2\text{H}_3\text{O}_2^-$ | <b>AgC<sub>2</sub>H<sub>3</sub>O<sub>2</sub></b>               | <b>silver(I) acetate</b>    |
| $\text{Fe}^{3+}$ | $\text{S}^{2-}$                    | <b>Fe<sub>2</sub>S<sub>3</sub></b>                             | <b>iron(III) sulfide</b>    |

Provide names and/or formulas for the following:

| <b>Formula</b>                      | <b>Name</b>                |
|-------------------------------------|----------------------------|
| HCl(aq)                             | <b>hydrochloric acid</b>   |
| HBrO <sub>2</sub> (aq)              | <b>bromous acid</b>        |
| H <sub>2</sub> SO <sub>4</sub> (aq) | <b>sulfuric acid</b>       |
| HNO <sub>2</sub> (aq)               | <b>nitrous acid</b>        |
| HIO(aq)                             | <b>hypiodous acid</b>      |
| HIO <sub>4</sub> (aq)               | <b>periodic acid</b>       |
| NaOH                                | <b>sodium hydroxide</b>    |
| LiOH                                | <b>lithium hydroxide</b>   |
| NH <sub>4</sub> OH                  | <b>ammonium hydroxide</b>  |
| Mg(OH) <sub>2</sub>                 | <b>magnesium hydroxide</b> |

| <b>Formula</b>                      | <b>Name</b>         |
|-------------------------------------|---------------------|
| HBr(aq)                             | hydrobromic acid    |
| HClO <sub>2</sub> (aq)              | chlorous acid       |
| H <sub>2</sub> SO <sub>3</sub> (aq) | sulfurous acid      |
| H <sub>2</sub> S(aq)                | hydrosulfuric acid  |
| HNO <sub>3</sub> (aq)               | nitric acid         |
| H <sub>3</sub> PO <sub>4</sub> (aq) | phosphoric acid     |
| H <sub>3</sub> PO <sub>3</sub> (aq) | phosphorous acid    |
| KOH                                 | potassium hydroxide |
| Ca(OH) <sub>2</sub>                 | calcium hydroxide   |
| H <sub>2</sub> O                    | dihydrogen monoxide |