NAME: **HONORS CHEMISTRY**

SECTION: Acid Nomenclature

Refer to your list of polyatomic ions and a periodic table.

We can recognize acids because they have H+ ions as the cation in the formula.

* Binary acids
	+ When the anion does NOT contain oxygen:

Use the prefix *hydro* + **root of the anion’s name** – *ic* + the word acid

Examples: HCl is *hydro***chlor***ic* acid.

 HBr is *hydro***brom***ic* acid

* Ternary acids (aka oxyacids)
	+ When the anion contains oxygen:

 The name will depend on the name of the polyatomic anion.

*DO NOT use the prefix hydro- to name these acids!*

* + - **If the anion name ends in -ate, the acid name will end in -ic, then add the word acid.**

 Example H2SO4 (aq)

The anion is sulf**ate**, so the acid name will end in -**ic.**

The name is sulfuric acid**.**

* + - **If the anion name ends in -ite, the acid name will end in -ous, then add the word acid.**

ExampleH2SO3 (aq)

 The anion is sulf**ite**, so the name of the acid will end in **ous**:

 The name is Sulfurous acid**.**

 ATE → IC ITE → OUS

Note the (aq) symbol…we only name these substances as acids when dissolved in water! As pure substances, they are gases and we name them as ionic compounds.

Write the formula for each of the acids listed below:

|  |  |
| --- | --- |
| 1. Nitric acid
 |  |
| 1. Acetic acid
 |  |
| 1. Hydrobromic acid
 |  |
| 1. Sulfurous acid
 |  |
| 1. Chlorous acid
 |  |
| 1. Hydrochloric acid
 |  |
| 1. Phosphoric acid
 |  |
| 1. Nitrous acid
 |  |
| 1. Hydrofluoric acid
 |  |
| 1. Perchloric acid
 |  |
| 1. Hydroiodic acid
 |  |
| 1. Chloric acid
 |  |

Name each of the following acids:

|  |  |
| --- | --- |
| 1. HClO4(aq)
 |  |
| 1. H3PO4(aq)
 |  |
| 1. H2S (aq)
 |  |
| 1. HNO2(aq)
 |  |
| 1. HCN(aq)
 |  |
| 1. HC2H3O2(aq)
 |  |
| 1. HMnO4(aq)
 |  |
| 1. H2CO3(aq)
 |  |

Acid Nomenclature Worksheet Name \_\_\_\_\_KEY\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write the formula for each of the acids listed below:

|  |  |
| --- | --- |
| 1. Nitric acid |  HNO3 |
| 2. Chloric acid |  HClO3 |
| 3. Acetic acid |  HC2H3O2 |
| 4. Hydrobromic acid |  HBr |
| 5. Sulfurous acid |  H2SO3 |
| 6. Chlorous acid |  HClO2 |
| 7. Hydrochloric acid |  HCl |
| 8. Phosphoric acid |  H3PO4 |
| 9. Nitrous acid |  HNO2 |
| 10. Hydrofluoric acid |  HF |
| 11. Perchloric acid |  HClO4 |
| 12. Hydroiodic acid |  HI |
| 13. Phosphorous acid |  H3PO3 |
| 14. Carbonic acid |  H2CO3 |
| 15. Chloric acid |  H2CO3 |

Name each of the following acids:

|  |  |
| --- | --- |
| 16. HClO4 |  Perchloric acid |
| 17. H3PO4 |  Phosphoric acid |
| 18. HCl (aq) |  Hydrochloric acid |
| 19. H2SO4 |  Sulfuric acid  |
| 20. HNO2 |  Nitrous acid |
| 21. HI (aq) |  Hydroiodic acid |
| 22. HC2H3O2 |  Acetic acid |
| 23. HF (aq) |  Hydrofluoric acid |
| 24. H3PO3 |  Phosphorous acid |
| 25. HClO3 |  Chloric acid |
| 26. H2CO3 |  Carbonic acid |
| 27. H2SO3 |  Sulfurous acid |
| 28. HClO2 |  Chlorous acid |
| 29. HNO3 |  Nitric acid |
| 30. HBr (aq) |  Hydrobromic acid |

For the following bases, write the respective chemical formula or its name

|  |  |
| --- | --- |
| 31. NaOH |  Sodium hydroxide |
| 32. Mg(OH)2 |  Magnesium hydroxide |
| 33. NH4OH |  Ammonium hydroxide |
| 34. Ca(OH)2 |   |