



## Naming Acids Worksheet Packet

Name: Answer Key

1. What is the definition of an acid?

*An acid is a substance that when in water gives off hydrogen ions*

2. What are the rules for naming acids?

*If no oxygen in anion HYDRO + root of anion + IC acid*

*If oxygen add – IC to root of anion or element if –ate ending on anion or add –OUS to root of anion or element if –ite ending on anion.*

3. Write the names and the anions for the following acids.

<u>Acid</u>	<u>Anion</u>	<u>Name</u>
$\text{H}_2\text{SO}_4$	sulfate	sulfuric acid
$\text{H}_3\text{PO}_4$	phosphate	phosphoric acid
$\text{HC}_2\text{H}_3\text{O}_2$	acetate	acetic acid
$\text{H}_2\text{SO}_3$	sulfite	sulfurous acid
$\text{HNO}_2$	nitrite	nitrous acid
$\text{HClO}_4$	perchlorate	perchloric acid
$\text{HClO}_3$	chlorate	chloric acid
$\text{HClO}_2$	chlorite	chlorous acid
$\text{HClO}$	hypochlorite	hypochlorous acid

Write the name for the following acids in the space given.

- |                                   |                   |
|-----------------------------------|-------------------|
| 1. HCl                            | hydrochloric acid |
| 2. H <sub>2</sub> SO <sub>4</sub> | sulfuric acid     |
| 3. H <sub>3</sub> PO <sub>4</sub> | phosphoric acid   |
| 4. HNO <sub>3</sub>               | nitric acid       |
| 5. HI                             | hydroiodic acid   |

Write the formula for the following acids in the space given.

- |                      |                                     |
|----------------------|-------------------------------------|
| 6. hydrobromic acid  | HBr (aq)                            |
| 7. cyanic acid       | HCN (aq)                            |
| 8. perchloric acid   | HClO <sub>4</sub> (aq)              |
| 9. hydrofluoric acid | HF (aq)                             |
| 10. sulfurous acid   | H <sub>2</sub> SO <sub>3</sub> (aq) |

Write the formula for each of the acids listed below:

Nitric acid	$\text{HNO}_3$ (aq)
Hydrocyanic acid	$\text{HCN}$ (aq)
Chloric acid	$\text{HClO}_3$ (aq)
Acetic acid	$\text{HC}_2\text{H}_3\text{O}_2$ (aq)
Hydrobromic acid	$\text{HBr}$ (aq)
Sulfurous acid	$\text{H}_2\text{SO}_3$ (aq)
Chlorous acid	$\text{HClO}_2$ (aq)
Hydrochloric acid	$\text{HCl}$ (aq)
Phosphoric acid	$\text{H}_3\text{PO}_4$ (aq)
Nitrous acid	$\text{HNO}_2$ (aq)
Hydrofluoric acid	$\text{HF}$ (aq)
Perchloric acid	$\text{HClO}_4$ (aq)
Hydroiodic acid	$\text{HI}$ (aq)
Phosphorous acid	$\text{H}_3\text{PO}_3$ (aq)
Carbonic acid	$\text{H}_2\text{CO}_3$ (aq)
Sulfuric acid	$\text{H}_2\text{SO}_4$ (aq)

Name each of the following acids:

$\text{HClO}_4$	Perchloric acid
$\text{H}_3\text{PO}_4$	Phosphoric acid
$\text{HCl}$ (aq)	Hydrochloric acid
$\text{H}_2\text{SO}_4$	Sulfuric acid
$\text{HNO}_2$	Nitrous acid
$\text{HI}$ (aq)	Hydroiodic acid
$\text{HC}_2\text{H}_3\text{O}_2$	Acetic acid
$\text{HF}$ (aq)	Hydrofluoric acid
$\text{H}_3\text{PO}_3$	Phosphorous acid
$\text{HClO}_3$	Chloric acid
$\text{H}_2\text{CO}_3$	Carbonic acid
$\text{H}_2\text{SO}_3$	Sulfurous acid
$\text{HClO}_2$	Chlorous acid
$\text{HNO}_3$	Nitric acid
$\text{HBr}$ (aq)	Hydrobromic acid

Acid formula	Acid name
HCl (aq)	Hydrochloric acid
HClO (aq)	Hypochlorous acid
HClO <sub>2</sub> (aq)	Chlorous acid
HClO <sub>3</sub> (aq)	Chloric acid
HClO <sub>4</sub> (aq)	perchloric acid
HNO <sub>3</sub> (aq)	Nitric acid
HBr (aq)	Hydrobromic acid
H <sub>3</sub> PO <sub>4</sub> (aq)	Phosphoric acid
H <sub>3</sub> PO <sub>3</sub> (aq)	Phosphorous acid
HCN (aq)	Hydrocyanic acid
HC <sub>2</sub> H <sub>3</sub> O <sub>2</sub> (aq)	Acetic acid
H <sub>2</sub> CO <sub>3</sub> (aq)	Carbonic acid
HI (aq)	Hydroiodic acid
HF (aq)	Hydrofluoric acid

### Acid Names

H <sub>2</sub> SO <sub>4</sub>	sulfuric acid	HClO <sub>4</sub>	perchloric acid
H <sub>2</sub> SO <sub>3</sub>	sulfurous acid	HClO <sub>3</sub>	chloric acid
HNO <sub>3</sub>	nitric acid	HClO <sub>2</sub>	chlorous acid
HNO <sub>2</sub>	nitrous acid	HClO	hypochlorous
H <sub>3</sub> PO <sub>4</sub>	phosphoric acid	HCl	hydrochloric acid
H <sub>3</sub> PO <sub>3</sub>	phosphorous acid	HBr	hydrobromic acid
H <sub>2</sub> CO <sub>3</sub>	carbonic acid	HI	hydroiodic acid
HC <sub>2</sub> H <sub>3</sub> O <sub>2</sub>	acetic acid	HF	hydrofluoric acid

1. Given the name of the acid, match its formula (assume all are aqueous)

- |                       |                                      |
|-----------------------|--------------------------------------|
| a. Sulfurous acid     | → i. HCl                             |
| b. Hydrosulfuric acid | → ii. HNO <sub>3</sub>               |
| c. Nitric acid        | → iii. HClO <sub>3</sub>             |
| d. Chloric acid       | → iv. H <sub>2</sub> SO <sub>3</sub> |
| e. Hydrochloric acid  | → v. HF                              |
| f. Chlorous acid      | → vi. H <sub>2</sub> S               |
| g. Hydrofluoric acid  | → vii. HClO <sub>2</sub>             |

2. Given the formula, determine the name

a. HBr(aq)

- |                        |                             |
|------------------------|-----------------------------|
| i. Bromic acid         | ii. Bromous acid            |
| iii. Hydrobromous acid | <b>iv. hydrobromic acid</b> |

b. H<sub>3</sub>PO<sub>4</sub>(aq)

- |                            |                          |
|----------------------------|--------------------------|
| <b>i. Phosphoric acid</b>  | ii. Phosphorous acid     |
| iii. hydrophosphorous acid | iv. Hydrophosphoric acid |

c. H<sub>2</sub>Se(aq)

- |                         |                              |
|-------------------------|------------------------------|
| i. Selenic acid         | ii. Selenous acid            |
| iii. hydroselenous acid | <b>iv. Hydroselenic acid</b> |

d. HC<sub>2</sub>H<sub>3</sub>O<sub>2</sub>(aq)

- |                       |                       |
|-----------------------|-----------------------|
| <b>i. Acetic acid</b> | ii. Acetous acid      |
| iii. hydroacetic acid | iv. Hydroacetous acid |

Name the following acids

1. HCL	hydrochloric acid
2. HClO <sub>4</sub>	perchloric acid
3. HIO <sub>3</sub>	iodic acid
4. HI	hydroiodic acid
5. H <sub>2</sub> SO <sub>4</sub>	sulfuric acid
6. H <sub>2</sub> S	hydrosulfuric acid
7. HCN	hydrocyanic acid
8. H <sub>2</sub> CO <sub>3</sub>	carbonic acid
9. HBrO <sub>4</sub>	perbromic acid
10. HBrO <sub>3</sub>	bromic acid
11. HC <sub>2</sub> H <sub>3</sub> O <sub>2</sub>	acetic acid
12. H <sub>3</sub> PO <sub>3</sub>	phosphorous acid
13. H <sub>3</sub> P	hydrophosphoric acid
14. H <sub>2</sub> CrO <sub>4</sub>	chromic acid
15. H <sub>2</sub> CrO <sub>2</sub>	hypochromic acid
16. H <sub>2</sub> Cr	hydrochromic acid

Give formulas for the following acids

17. hydrofluoric acid	HF (aq)
18. nitric acid	HNO <sub>3</sub> (aq)
19. nitrous acid	HNO <sub>2</sub> (aq)
20. hydroxic acid	H <sub>2</sub> O – Water
21. periodic acid	HIO <sub>4</sub> (aq)
22. percarbonic acid	H <sub>2</sub> CO <sub>4</sub> (aq)
23. hypobromous acid	HBrO (aq)
24. bromous acid	HBrO <sub>2</sub> (aq)
25. permanganic acid	HMnO <sub>4</sub> (aq)
26. manganic acid	HMnO <sub>3</sub> (aq)
27. iodos acid	HIO <sub>2</sub> (aq)
28. sulfurous acid	H <sub>2</sub> SO <sub>3</sub> (aq)
29. sulfuric acid	H <sub>2</sub> SO <sub>4</sub> (aq)
30. perchloric acid	HClO <sub>4</sub> (aq)
31. chlorous acid	HClO <sub>2</sub> (aq)
32. acetic acid	HC <sub>2</sub> H <sub>3</sub> O <sub>2</sub> (aq)
33. phosphoric acid	H <sub>3</sub> PO <sub>4</sub> (aq)
34. phosphorous acid	H <sub>3</sub> PO <sub>3</sub> (aq)