

# Acid Nomenclature (naming)

## Naming acids

name-end in "acid"  
formula starts with "H"

Identify the acid: cation is always H<sup>+</sup>  
use the anion to name it

3 ways to name:

1. binary acids ("bi" = "2") or non-oxy acid  
H<sup>+</sup> and one other element

anion ends in -ide

Ionic rules to below	HCl	Cl <sup>-1</sup>	<u>chloride</u>	hydro- <u>chlor</u> -ic acid
	HF	F <sup>-1</sup>	<u>fluoride</u>	hydro- <u>fluor</u> -ic acid
	H <sub>2</sub> S	S <sup>-2</sup>	<u>sulfide</u>	hydro- <u>sulfur</u> -ic acid
	H <sub>3</sub> N	N <sup>-3</sup>	<u>nitride</u>	hydro- <u>nitr</u> -ic acid

Binary rule: **hydro-stem-ic acid**  
use stem from anion

2. Oxyacid (ternary) acids  
contain oxygen

means "3"  
no "hydro"

Again, look at the anion

HNO <sub>3</sub>	NO <sub>3</sub> <sup>-1</sup>	<u>nitrate</u>	<u>nitr</u> ic acid
H <sub>2</sub> SO <sub>4</sub>	SO <sub>4</sub> <sup>-2</sup>	<u>sulfate</u>	<u>sulfur</u> ic acid
H <sub>3</sub> PO <sub>4</sub>	PO <sub>4</sub> <sup>-3</sup>	phosphate	<u>phosphor</u> ic acid

Oxyacid rule #1:  
if anion ends in -ate, use stem-ic acid

\* I ate something ic-ky in the cafeteria

HNO <sub>2</sub>	NO <sub>2</sub> <sup>-1</sup>	<u>nitrite</u>	<u>nitr</u> ous acid
H <sub>2</sub> SO <sub>3</sub>	SO <sub>3</sub> <sup>-2</sup>	<u>sulfite</u>	<u>sulfur</u> ous acid
H <sub>3</sub> PO <sub>3</sub>	PO <sub>3</sub> <sup>-3</sup>	phosphite	<u>phosphor</u> ous acid

oxyacid rule #2:  
if anion ends in -ite, use stem-ous acid

acid - ite - ous

# Acid nomenclature.notebook

Formula	Anion	Anion name	Acid Name
HF	F <sup>-</sup> is	fluoride	hydrofluoric acid
HCl	Cl <sup>-</sup> is	chloride	hydrochloric acid
HBr	Br <sup>-</sup> is	bromide	hydrobromic acid
HI	I <sup>-</sup> is	iodide	hydroiodic acid
H <sub>2</sub> S	S <sup>2-</sup> is	sulfide	hydrosulfuric acid
HNO <sub>3</sub>	NO <sub>3</sub> <sup>-</sup> is	nitrate	nitric acid
HC <sub>2</sub> H <sub>3</sub> O <sub>2</sub>	C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> <sup>-</sup> is	acetate	acetic acid
H <sub>2</sub> SO <sub>4</sub>	SO <sub>4</sub> <sup>2-</sup> is	sulfate	sulfuric acid
H <sub>2</sub> CO <sub>3</sub>	CO <sub>3</sub> <sup>2-</sup> is	carbonate	carbonic acid
H <sub>3</sub> PO <sub>4</sub>	PO <sub>4</sub> <sup>3-</sup> is	phosphate	phosphoric acid
HClO	ClO <sup>-</sup> is	hypochlorite	hypochlorous acid
HClO <sub>2</sub>	ClO <sub>2</sub> <sup>-</sup> is	chlorite	chlorous acid
HClO <sub>3</sub>	ClO <sub>3</sub> <sup>-</sup> is	chlorate	chloric acid
HClO <sub>4</sub>	ClO <sub>4</sub> <sup>-</sup> is	perchlorate	perchloric acid
HIO <sub>3</sub>	IO <sub>3</sub> <sup>-</sup> is	iodate	iodic acid
HNO <sub>2</sub>	NO <sub>2</sub> <sup>-</sup> is	nitrite	nitrous acid
H <sub>2</sub> SO <sub>3</sub>	SO <sub>3</sub> <sup>2-</sup> is	sulfite	sulfurous acid
<i>HCN</i>	<i>CN<sup>-</sup></i>	<i>cyanide</i>	<i>hydrocyanic acid</i>

Nov 10-6:33 AM


## Naming Acids

	<b>Anion Ending</b>	<b>Acid Name</b>
Binary @	<i>-ide</i>	<i>hydro-(stem)-ic acid</i>
Oxyacid/ Ternary	<i>-ate</i>	(stem) <i>-ic acid</i>
	<i>-ite</i>	(stem) <i>-ous acid</i>

***An easy way to remember which goes with which...***

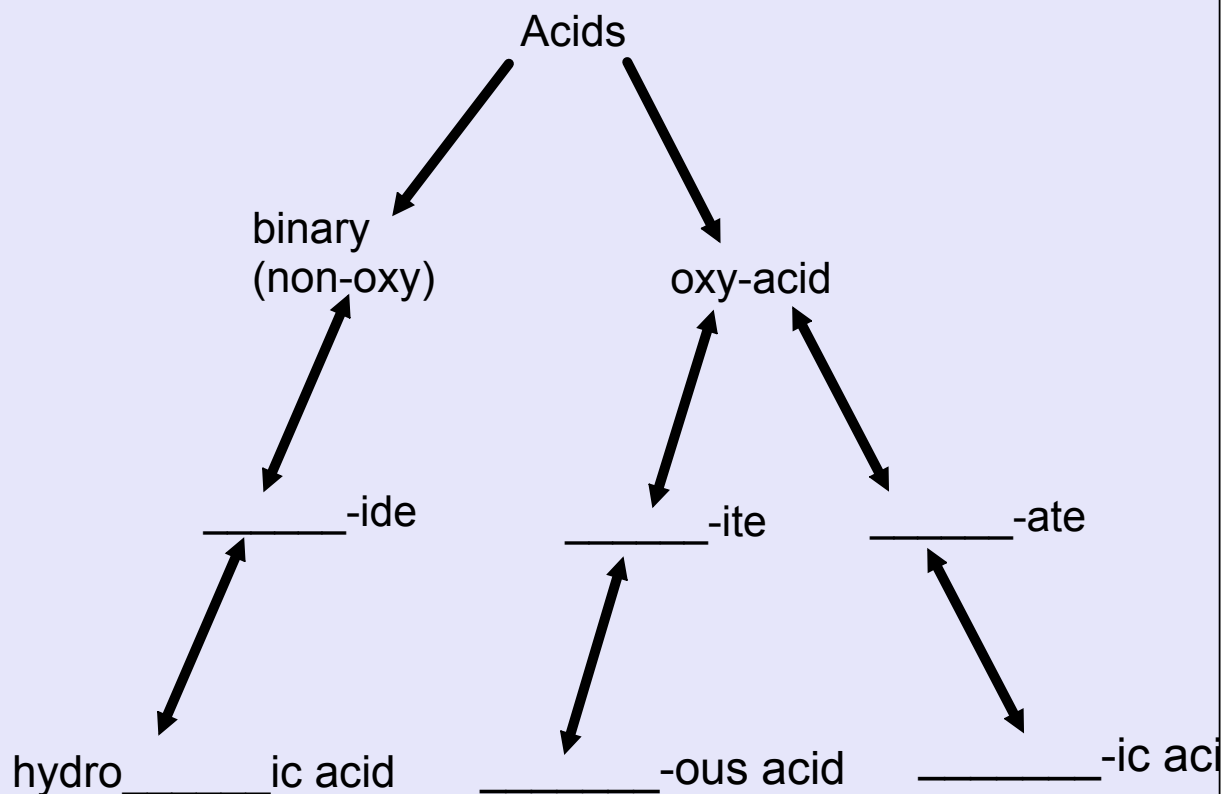
***“In the cafeteria, you ATE something ICky”***

# Naming Acids

	name of anion underline stem	rule	acid name
$\begin{matrix} +1 & -1 \\ \text{H} & \text{Br} \end{matrix}$ $\underline{\text{HBr}}$	<u>bromide</u>	binary: hydro- <u>stem</u> -ic acid	<b>hydro<u>bromic</u> acid</b>
$\begin{matrix} (+1) \times 2 & -2 \\ \text{H}_2 & \text{CO}_3 \end{matrix}$	<u>carbonate</u>	oxyacid: <u>Stem</u> -ic acid	<b><u>carbonic</u> acid</b>
$\begin{matrix} (+1) \times 2 & -2 \\ \text{H}_2 & \text{SO}_3 \end{matrix}$ 	<u>sulfite</u>	oxyacid: <u>Stem</u> -ous acid	<b><u>sulfurous</u> acid</b>  (note: not exact stem)

↑  
using ionic rules to balance

acid nomenclature:



Hydrogens will balance the overall charge to zero...  
(like ionic)



What indicates an acid:

in the name? "acid" at the end  
in the formula? starts with H

HCl	<b>chloride</b>	hydrochloric acid
HClO	<b>hypochlorite</b>	hypochlorous acid
HClO <sub>2</sub>	<b>chlorite</b>	chlorous acid
HClO <sub>3</sub>	<b>chlorate</b>	chloric acid
HClO <sub>4</sub>	<b>perchlorate</b>	perchloric acid