Acids

Nomenclature of "H"

Binary Acids

- Composed of only 2 elements
- The 2 elements are hydrogen & another non-metal
- Acids are always found in aqueous form (aq)
- Example: $HCl_{(aq)}$ is hydrochloric acid

The prefix "hydro" suggests the compound is binary

The suffix "ic" tells us the compound is an acid

Examples of Binary

Molecular	Acidic
$HCl_{(g)}$: hydrogen chloride	$HCl_{(aq)}$: hydrochloric acid

Oxy Acids

- Composed of more than 2 elements
- The 3 elements are hydrogen, oxygen & another non-metal
- The non-metal elements determine the acid and molecular names.
- Example: $H_2SO_{4(aq)}$ is sulfuric acid

Start with your polyatomic ion (i.e., sulfate, SO_4)

The suffix "ic" tells us the compound is an acid - sulfate becomes sulfuric

DO NOT USE "hydro!!!"

Examples of Oxy Acids

Molecular	Acidic
$H_2SO_{4(g)}$: hydrogen sulfate	$H_2SO_{4(aq)}$: sulfuric acid

Acids (with derived complex ions)

- Start again with your regular complex ion combined with "H"

ADD one oxygen:

perphosphoric acid: $H_3PO_{5\ (aq)}$ "per" prefix & "ate" becomes "ic" + "acid"

REGULAR (this you already know):

phosphoric acid: $H_3PO_{4\ (aq)}$ "ate" becomes "ic" + "acid"

Remove one oxygen:

phosphorous acid: $H_3PO_{3\ (aq)}$ "ite" becomes "ous" + "acid"

Remove one more oxygen (2 in total):

hypophosphororous acid: $H_3PO_{2\ (aq)}$ "hypo" prefix & "ite" becomes "ous" + "acid"