

Naming and Writing Formulas for Acids and Bases

Reminder:

Acids are aqueous hydrogen compounds that turn blue litmus red.

Bases are aqueous solutions of ionic hydroxides that turn red litmus blue.

IDENTIFYING ACIDS AND BASES FROM FORMULA'S

Most acid can be identified from **starting with H** or ending in COOH.

i.e. HCl, H₂SO₄, CH₃COOH

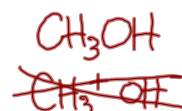
Note: NH₃ and CH₄ are not acids!

ionic
q

Most bases can be identified from ending in -OH

Bases are named using the rules for naming ionic compounds.

Ex. NaOH sodium hydroxide



When naming acids, common names (for common acids) or IUPAC names can be used.

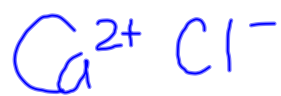
Classical Acid Names

- used the suffix **-ic** Ex. sulfuric
- used hydro and the suffix **-ic** Ex. hydrochloric
- used suffix **-ous** Ex. sulfurous
- and others (see inside back cover)

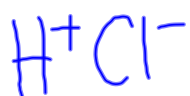
IUPAC (modern) Acid Names

- name the acid as an aqueous hydrogen compound
- Ex. aqueous hydrogen sulfide - H₂S_(aq)

IONIC



ACIDS



MOLECULAR



BASES



Rules for Naming Acids

1. If anion ends in -ide, the acid is "hydrochloric acid"

Ex. HCl

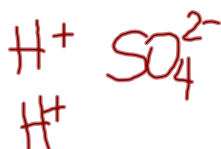


aqueous hydrogen chloride

hydrochloric acid

2. If anion ends in -ate, the acid is "sulfuric acid"

Ex. H₂SO₄

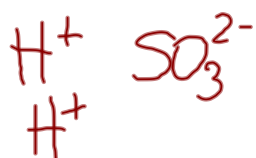


aqueous hydrogen sulfate

sulfuric acid

3. If anion ends in -ite, the acid is "sulfurous acid"

Ex. H₂SO₃



aqueous hydrogen sulfite

sulfurous acid



aqueous hydrogen cyanide u



hydrocyanic acid



aqueous hydrogen phosphate u



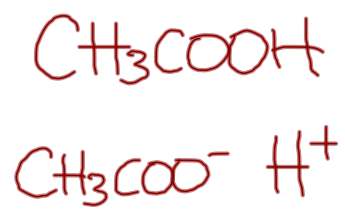
phosphoric acid



aqueous hydrogen nitrite u



nitrous acid



carbonic acid ^{-ate}



	Litmus Test	Solution Conductivity
Ionic	no change	✓
Molecular	no change	X
Acids	blue → red	✓
Bases	red → blue	✓

CH_3COOH , NaCl , NaOH , CO_2

	Litmus Test	Solution Conductivity
A	—	X
B	r → b	✓
C	b → r	✓
D	—	✓

m

b

a

i

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EXERCISE # 26-33