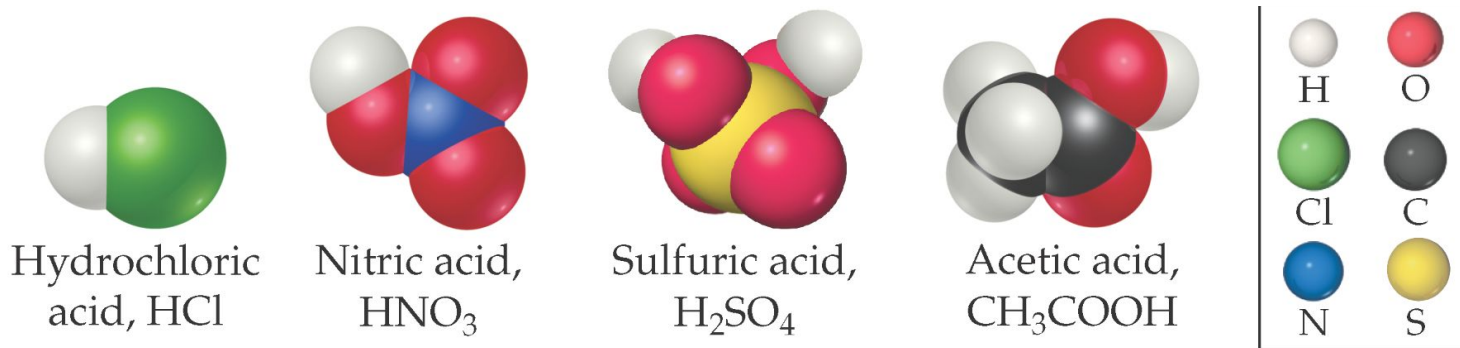


Acid Properties and Nomenclature

Dominic F

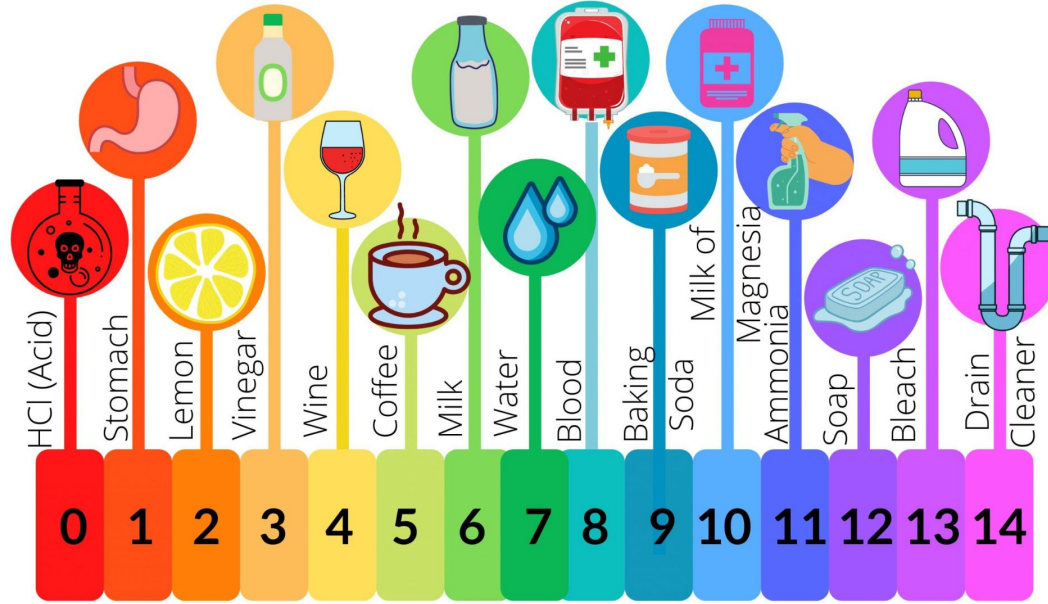
Acid Basics

- Substances that ionize when dissolved in water and yield H^+ ions
- Usually reactive with other substances
- Act like IONIC COMPOUNDS
- State - Aqueous (aq) - Dissolved in water
- Use (aq) as the state for acids in chemical reactions



Acid Concentration - pH

The pH Scale



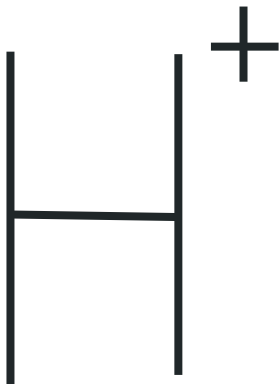
- Measured on a scale of 0-14, with 7 as neutral

- 0 = Most acidic, 14 = Most basic

- $\text{pH} = -\log\{\text{H}^+\}$

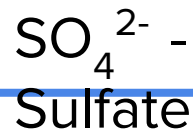
Composition

Cation (+)



- One or more positively charged (+) hydrogen cations

Anion (-)



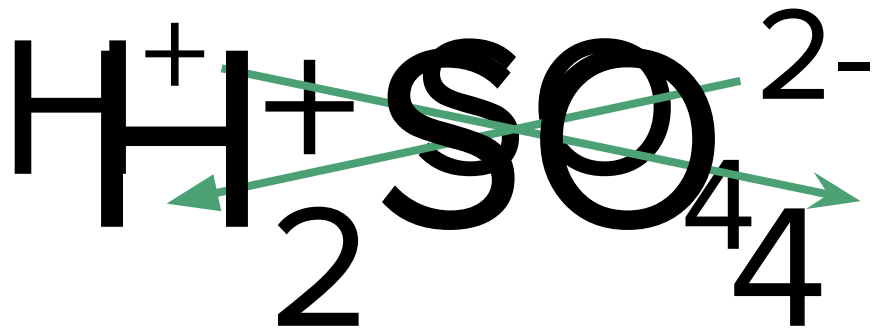
Polyatomic Ion
- **Oxyacid**

OR



ONE Nonmetal Ion - **Binary Acid**

Writing Acid Formulas



Criss-Cross ION Charges

- Same process as ionic compound formulas

Binary Acid Nomenclature

hydro + nonmetal root + ic
acid

1. Add **hydro-** as a prefix
2. Add **root name** of anion/nonmetal
 - EX: chlor-, brom- sulfur-
3. Add the suffix **-ic**
4. Add **acid**

Anion	Corresponding Acid
Cl^- (chlor ide)	HCl (hydro chlor ic acid)
S^{2-} (sulf ide)	H_2S (hydro sulfur ic acid)

Oxyacid Nomenclature

- ATE to IC
- ITE to OUS

1. Add **root name** of oxyacid
 - EX: Chlor, Perchlor, Hypochlor
2. Determine **suffix** of polyatomic anion (-ate and -ite)
3. **Change Suffix:**
 - If ending in -ate, go to -ic
 - If ending in -ite, go to -ous
4. Keep the **per/hypo prefixes**, and add acid

Anion		Corresponding Acid	
ClO_4^-	(perchlorate)	HClO_4	(perchloric acid)
ClO_3^-	(chlorate)	HClO_3	(chloric acid)
ClO_2^-	(chlorite)	HClO_2	(chlorous acid)
ClO^-	(hypochlorite)	HClO	(hypochlorous acid)

REMEMBER

ATE to IC and **ITE to OUS**

KEEP PREFIXES

- PER/HYPO

Nomenclature Practice - Name these acids:

1. HBr

2. HI

3. H_3PO_4

4. HClO

1. Hydrobromic acid

2. Hydroiodic acid

3. Phosphoric acid

4. Hypochlorous acid

Nomenclature Practice - Create formulas:

1. Hydrofluoric acid

2. Chloric acid

3. Hypochloric acid

4. Perphosphoric acid

1. HF

2. HClO_3

3. HClO_2

4. H_3PO_5