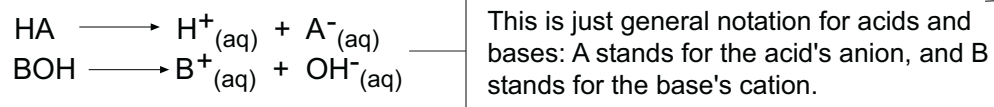


Acids and Bases: Strong Acids and Strong Bases: Student Review Notes

You probably know from some previous chemistry course that there are strong and weak acids/bases. Here we'll take a look at the strong ones. It's easiest to remember the compounds that are considered strong acids or bases and then just know that if it's not strong it must be weak.

The assumption for **strong acids or bases is that they dissociate 100%** when you put them into water. For example:

**STRONG ACIDS**

HCl	---->	Hydrochloric acid
HBr	---->	Hydrobromic acid
HI	---->	Hydriodic acid
HNO₃	---->	Nitric acid
HClO₄	---->	Perchloric acid
HClO₃	---->	Chloric acid
H₂SO₄	---->	Sulfuric acid

Sometimes you may need to compare acids to answer a question like "which of the following acids is stronger?". You can use two general trends to address this type of question:

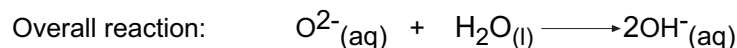
1. For acid hydrides (HCl, HBr, etc.) the acidity increases within a group as the size of the central atom increases.
2. Oxyacids (like H₂SO₄) can be written generally as:

$$\text{H}_m\text{XO}_n$$
 - a. The greater (n-m) the stronger the acid.
 - b. For the same n and m, the acid strength increases as the electronegativity of X increases.

STRONG BASES

Metal Hydroxides: These are group IA and group IIA metals bonded to a hydroxyl group.
All group IA hydroxides are considered strong bases.
Large group IIA hydroxides (start with Ca) are considered strong bases.

Ionic Metal Oxides: these are group IA and group IIA metals bonded with oxygen (Na₂O and CaO).
When you put them into water they attack the H₂O and break it up to form OH⁻



Ionic Hydrides and Nitrides: The ions H⁻ and N³⁻ react with water to form OH⁻

