

3.4: Naming acids

Acids donate produce protons and anions when dissolved in water. The naming is different for acids that have oxyanions and the others.

Naming acid that does not contain oxyanion

There are two nomenclatures, first as ionic compounds and second as acids.

Naming acids as ionic compounds

Wright the name of the cation element, i.e., hydrogen, followed by the name of anion without ion at the end. For example, HCl is hydrogen chloride, and HCN is hydrogen cyanide. The ionic name is preferred when the compound is not acting as an acid, e.g., pure HCl in the gas phase.

Naming as acids

Add prefix hydro- to the name of anion and replace the last syllable from -ide to -ic acid. For example, HCl is hydrochloric acid, HCN is hydrocyanic acid, HI is hydroiodic acid. The acid name is preferred when the compound acts as an acid, particularly when it is in solution form in water.

Naming acid that contains oxyanion

Begin the name with the name of oxyanion and change the last syllable from -ate to -ic acid or from -ite to -ous acid. If there is prefix per- or hypo to the name of the oxyanion, it stays in the acid name. For example: (NO_3^-) is nitrate and (HNO_3) is nitric acid ; (NO_2^-) is nitrite and (HNO_2) is nitrous acid; (SO_4^{2-}) is sulfate and (H_2SO_4) sulfuric acid; (ClO_4^-) is perchlorate and (HClO_4) is perchloric acid; and (ClO^-) is hypochlorite and (HClO) is hypochlorous acid.

One of the commonly encountered oxyacid is acetic acid. Acetic acid is an organic acid with the formula CH_3COOH , where the last hydrogen attached with oxygen is the acidic proton, and the other three oxygen attached with carbon are not acidic. The anion from acetic acid is called acetate ion that has a formula CH_3COO^- which may also be written as $\text{C}_2\text{H}_3\text{O}_2^-$.

This page titled 3.4: Naming acids is shared under a [Public Domain](#) license and was authored, remixed, and/or curated by [Muhammad Arif Malik](#).