An acid is a substance that can donate or supply a proton, H⁺.
In most cases, the hydrogen is the first element in the chemical formula. The binary acids possess hydrogen and a nonmetal. These acids result from dissolving the binary molecular compound in water.

Binary compounds of hydrogen and a nonmetal in the gas or liquid states are named as molecular compounds. In Section 3.3, we learned to name and to write formulas of binary molecular compounds. For example, HCl(g) is named hydrogen chloride, where the "(g)" indicates the HCl is in the gaseous state. Many other binary compounds of hydrogen are treated in the same manner. H₂S(g) is named hydrogen sulfide.

When these compounds are in an aqueous (water) solution, we name them as acids. To name a binary acid, we use a hydro- prefix to designate the hydrogen. The "-ide" ending of the nonmetal in the molecular name of the compound binary is changed "ic acid". Using hydrogen chloride as an example, HCl(aq) is called hydrochloric acid. Another example is the name hydrochloric acid for H₂S(aq). The "(aq)" designates an aqueous or water solution.

EXAMPLE HCl(aq) is called hydrochloric acid.