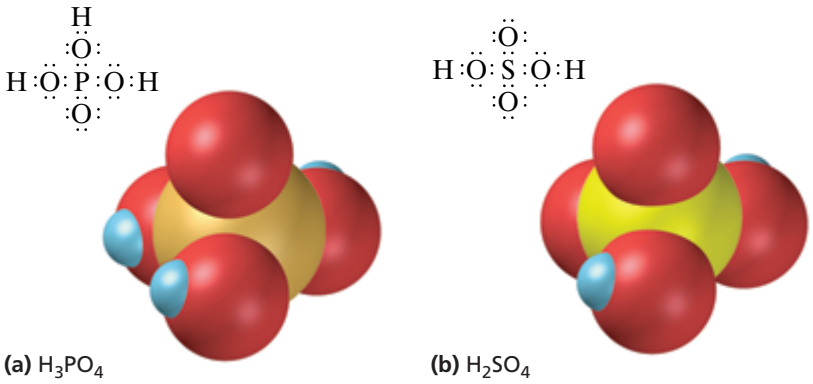

(a) H_3PO_4 (b) H_2SO_4

FIGURE 3 Structures of (a) phosphoric acid and (b) sulfuric acid

Binary Acid Nomenclature

1. The name of a binary acid begins with the prefix *hydro-*.
2. The root of the name of the second element follows this prefix.
3. The name then ends with the suffix *-ic*.

An **oxyacid** *is an acid that is a compound of hydrogen, oxygen, and a third element, usually a nonmetal.* Nitric acid, HNO_3, is an oxyacid. The structures of two other oxyacids are shown in **Figure 3.** Oxyacids are one class of ternary acids, which are acids that contain three different elements. Usually, the elements in an oxyacid formula are written as one or more hydrogen atoms followed by a polyatomic anion. But as you can see from the structures, the H atoms are bonded to O atoms. The names of oxyacids follow a pattern, and the names of their anions are based on the names of the acids. Some common oxyacids and their anions are given in **Table 2.**

TABLE 2 *Names of Common Oxyacids and Oxyanions*

Formula	Acid name	Anion
CH_3COOH	acetic acid	CH_3COO^-, acetate
H_2CO_3	carbonic acid	CO_3^{2-}, carbonate
HIO_3	iodic acid	IO_3^-, iodate
$HClO$	hypochlorous acid	ClO^-, hypochlorite
$HClO_2$	chlorous acid	ClO_2^-, chlorite
$HClO_3$	chloric acid	ClO_3^-, chlorate
$HClO_4$	perchloric acid	ClO_4^-, perchlorate
HNO_2	nitrous acid	NO_2^-, nitrite
HNO_3	nitric acid	NO_3^-, nitrate
H_3PO_3	phosphorous acid	PO_3^{3-}, phosphite
H_3PO_4	phosphoric acid	PO_4^{3-}, phosphate
H_2SO_3	sulfurous acid	SO_3^{2-}, sulfite
H_2SO_4	sulfuric acid	SO_4^{2-}, sulfate