The primary function of chemical nomenclature is to ensure that a spoken or written chemical name leaves no ambiguity concerning which chemical compound the name refers to: each chemical name should refer to a single substance. A less important aim is to ensure that each substance has a single name (although a limited number of alternative names is acceptable in some cases). The form of nomenclature used depends on the audience to which it is addressed. As such, no single correct form exists, but rather there are different forms that are more or less appropriate in different circumstances. A common name will often suffice to identify a chemical compound in a particular set of circumstances. However, in a few specific circumstances (such as the construction of large indices), it becomes necessary to ensure that each compound has a unique name.

In discussing chemistry nomenclatures, it is necessary to identify the type of compound including stoichiometry and type of constituent atoms. The first separation of importance is to distinguish between inorganic and organic compounds. Unfortunately, this separation is not always clear, even to experienced chemists. Historically (two centuries ago) the definitions were that inorganic compounds were synthesized by geological systems and organic compounds were found in biological systems. The modern definitions argue that organic compounds are any molecule containing carbon and by default this means that inorganic chemistry deals with molecules lacking carbon. The confusion arises when chemists that study carbon-based materials like diamond or graphite, but that argument is beyond the scope of this text. The following sections present the current nomenclature rules for inorganic and organic molecules.