

overall name of the compound is then assembled from the names of the constituents so as to indicate their proportions. One category of such compositional names is *generalized stoichiometric names* (see Section IR-5.4) in which the various parts may themselves be names of monoatomic and polyatomic ions. For this reason, Section IR-5.3, devoted to the naming of ions, is included. Another category consists of the names devised for addition compounds which have a format of their own, described in Section IR-5.5.

## IR-5.2 STOICHIOMETRIC NAMES OF ELEMENTS AND BINARY COMPOUNDS

A purely stoichiometric name carries no information about the structure of the species named.

In the simplest case, the species to be named consists of only one element, and the name is formed by adding the relevant multiplicative prefix to the element name (*e.g.* S<sub>8</sub>, octasulfur). This case is exemplified in Section IR-3.4.3.

When constructing a stoichiometric name for a binary compound, one element is designated as the electropositive constituent and the other the electronegative constituent. The electropositive constituent is *by convention* the element that occurs last in the sequence of Table VI\* and its name is the unmodified element name (Table I). The name of the electronegative constituent is constructed by modifying the element name with the ending 'ide', as explained in detail for monoatomic anions in Section IR-5.3.3.2. All element names thus modified with the 'ide' ending are given in Table IX.

The stoichiometric name of the compound is then formed by combining the name of the electropositive constituent, cited first, with that of the electronegative constituent, both suitably qualified by any necessary multiplicative prefixes ('mono', 'di', 'tri', 'tetra', 'penta', *etc.*, given in Table IV). The multiplicative prefixes precede the names they multiply, and are joined directly to them without spaces or hyphens. The final vowels of multiplicative prefixes should not be elided (although 'monoxide', rather than 'monooxide', is an allowed exception because of general usage). The two parts of the name are separated by a space in English.

Stoichiometric names may correspond to the empirical formula or to a molecular formula different from the empirical formula (compare Examples 3 and 4 below).

### *Examples:*

- |                                   |   |
|-----------------------------------|---|
| 1. HCl                            | hydrogen chloride   |
| 2. NO                             | nitrogen oxide, or nitrogen monooxide, or nitrogen monoxide |
| 3. NO <sub>2</sub>                | nitrogen dioxide  |
| 4. N <sub>2</sub> O <sub>4</sub>  | dinitrogen tetraoxide                                       |
| 5. OCl <sub>2</sub>               | oxygen dichloride   |
| 6. O <sub>2</sub> Cl              | dioxygen chloride   |
| 7. Fe <sub>3</sub> O <sub>4</sub> | triiron tetraoxide  |
| 8. SiC                            | silicon carbide   |

\*Tables numbered with a Roman numeral are collected together at the end of this book.