

## Oxidation Number Rules

1. The oxidation number of an atom in an uncombined element is zero.
2. The oxidation number of any monatomic ion equals its ionic charge.
3. In compounds, the oxidation number of many elements corresponds to the element's position in the periodic table:
  - a. Elements in Group 1A are +1.
  - b. Elements in Group 2A are +2.
  - c. Aluminum is +3.
  - d. Fluorine is -1.
  - e. Hydrogen has an oxidation number of +1 when combined with nonmetals and -1 when combined with metals.
  - f. Oxygen has an oxidation number of -2 in most compounds and ions.
4. The oxidation numbers of elements in compounds are written per atom.
5. The algebraic sum of the individual oxidation numbers of all atoms in the formula for compound is zero.
6. The algebraic sum of the individual oxidation numbers of all atoms in the formula for polyatomic ion is equal to the charge of the ion.

*Note:* Oxidation numbers are written with the charge (+ or -) followed by the number, whereas actual ionic charges are written with the number followed by the charge.