Rules for Assigning Oxidation Numbers

This is a prioritized list. If two rules contradict each other, follow the rule that appears higher on the list.

1. The atoms in pure elements are assigned an oxidation number of zero (0).

2. Monatomic ions are assigned an oxidation number equal to their charge.

3. For atoms in covalent molecules and polyatomic ions:
   a. The sum of all the oxidation numbers of the atoms in a covalent molecule must equal zero. The sum of all the oxidation numbers of the atoms in a polyatomic ion must equal the charge on the ion.
   b. Fluorine is assigned an oxidation number of –1.
   c. Oxygen is assigned an oxidation number of –2 (an exception to this is when oxygen occurs as the peroxide ion, O$_2^{-2}$, where it is assigned an oxidation number of –1).
   d. Hydrogen is assigned an oxidation number of +1.
   e. For all other elements in covalent molecules and polyatomic ions, the element with the greater electronegativity is typically assigned a negative oxidation number equal to its charge as an anion in ionic compounds.