

# Oxidation numbers rules

1. Each atom in a pure **element** has an oxidation number of **zero**
2. For **monoatomic ions**, the oxidation number is equal to the **charge on the ion**
3. The algebraic **sum** of the oxidation numbers for the atoms in a **neutral** compound must be **zero**; in a **polyatomic ion**, the **sum** must be equal to the **ion charge**
4. **Group 1 metals** in compounds always have an oxidation number of **+1**
5. **Group 2 metals** in compounds always have an oxidation number of **+2**
6. **Hydrogen** in compounds has an oxidation number of **+1** (except in hydrides, e.g., NaH)
7. **Oxygen** in compounds has an oxidation number of **-2** (except in peroxides, e.g., H<sub>2</sub>O<sub>2</sub>)
8. **Fluorine** in compounds always has an oxidation number of **-1**
9. **Halogens** in compounds usually have oxidation number of **-1**