Cations are generally named by taking the name of the metal and adding the Roman numeral for the oxidation state. The oxidation state is determined based on the charge of the metal ion or the group it belongs to in the periodic table.

Example:

- Fe<sup>2+</sup> is named Iron(II)
- Fe<sup>3+</sup> is named Iron(III) Anions:

Anions are named by taking the first part of the name of the parent element, followed by the suffix -ide. Polyatomic anions are named as a single word, while monatomic anions Cl<sup>-</sup> is named Chloride
SO<sub>4</sub><sup>2-</sup> is named Sultate
Quote
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"Polyatomic anions are named as a single word, and monatomic anions are hyphenated to the cation, ensuring clear communication of the compound's structure."

## **Complex Ions**

Complex ions consist of a central metal atom or ion bonded to one or more ligands, which can be monatomic or polyatomic. The nomenclature of complex ions involves specifying the central ion, ligands, and any charge.

Example:

• [Co(NH<sub>3</sub>)<sub>6</sub>]<sup>3+</sup> is called Hexaamminecobalt(III) ion