

Cations (Positive Ions)

Monoatomic

Polyatomic

Only One Ion Possible

More Than One Ion Possible

**Rule:**  
Name of element + "ion"

**Examples:**

|                  |               |
|------------------|---------------|
| Na <sup>+</sup>  | sodium ion    |
| Mg <sup>2+</sup> | magnesium ion |
| H <sup>+</sup>   | hydrogen ion  |
| K <sup>+</sup>   | potassium ion |
| Sr <sup>2+</sup> | strontium ion |
| Cs <sup>+</sup>  | cesium ion    |
| Ca <sup>2+</sup> | calcium ion   |

**Comment:**  
The number of positive charges is **NOT** indicated in the name because it is not necessary. These ions **NEVER** take on two possible positive charges.

**Comment:**  
Hydrogen will take on a negative one charge (see monoatomic anions for naming).

**Rule:**  
(a) newer rule - positive charges indicated by a Roman numeral

**Examples:**

|                  |                |
|------------------|----------------|
| Fe <sup>2+</sup> | iron(II) ion   |
| Fe <sup>3+</sup> | iron(III) ion  |
| Cu <sup>+</sup>  | copper(I) ion  |
| Cu <sup>2+</sup> | copper(II) ion |

(b) older rule (but still used) - Latin stem + "ous" for the lesser charge. Latin stem + "ic" for the greater charge.

**Examples:**

|                  |              |
|------------------|--------------|
| Fe <sup>2+</sup> | ferrous ion  |
| Fe <sup>3+</sup> | ferric ion   |
| Cu <sup>+</sup>  | cuprous ion  |
| Cu <sup>2+</sup> | cupric ion   |
| Sn <sup>2+</sup> | stannous ion |
| Sn <sup>4+</sup> | stannic ion  |

**Rule: ??**

**Examples:**

|                               |                                    |
|-------------------------------|------------------------------------|
| NH <sub>4</sub> <sup>+</sup>  | ammonium                           |
| Hg <sub>2</sub> <sup>2+</sup> | mercury(I) ion<br>or mercurous ion |

**Comment:**  
Hg<sub>2</sub><sup>2+</sup> is two Hg<sup>+</sup> ions bonded together, like this: Hg<sup>+</sup>—Hg<sup>+</sup>

However, Hg<sup>+</sup> by itself does not exist, therefore mercury(I) ion is Hg<sub>2</sub><sup>2+</sup>

(Also, Hg<sup>2+</sup> is mercury(II), but that is a monoatomic ion.)