

## onium compounds

1. Cations (with their counter-ions) derived by addition of a hydron to a mononuclear parent hydride of the nitrogen, chalcogen and halogen families.

(H<sub>4</sub>N<sup>+</sup>) ammonium

(H<sub>3</sub>O<sup>+</sup>) oxonium

(H<sub>2</sub>F<sup>+</sup>) fluoronium

(H<sub>4</sub>P<sup>+</sup>) phosphonium

(H<sub>3</sub>S<sup>+</sup>) sulfonium

(H<sub>2</sub>Cl<sup>+</sup>) chloronium

(H<sub>4</sub>As<sup>+</sup>) arsonium

(H<sub>3</sub>Se<sup>+</sup>) selenonium

(H<sub>2</sub>Br<sup>+</sup>) bromonium

(H<sub>4</sub>Sb<sup>+</sup>) stibonium

(H<sub>3</sub>Te<sup>+</sup>) telluronium

(H<sub>2</sub>I<sup>+</sup>) iodonium

(H<sub>4</sub>Bi<sup>+</sup>) bismuthonium

2. Derivatives formed by substitution of the above parent ions by univalent groups. The number of substituted hydrogen atoms is, especially in the case of hydrocarbyl substituents, indicated by the adjectives primary, secondary, tertiary or quaternary. E.g. (Cl<sub>2</sub>F<sup>+</sup>) dichlorofluoronium, (CH<sub>3</sub>)<sub>2</sub>S<sup>+</sup>H dimethylsulfonium (a secondary sulfonium ion), Cl(CH<sub>3</sub>)<sub>3</sub>P<sup>+</sup> chlorotrimethylphosphonium, (CH<sub>3</sub>CH<sub>2</sub>)<sub>4</sub>N<sup>+</sup> tetraethylammonium (a quaternary ammonium ion).

**See also:** arsonium compounds, halonium ions, oxonium ions, phosphonium compounds, quaternary ammonium compounds, stibonium compounds, sulfonium compounds

3. Derivatives formed by substitution of the above parent ions by groups having two or three free valencies on the same atom. Such derivatives are, where possible, designated by a specific class name. E.g. RC≡O<sup>+</sup> hydrocarbylidyne oxonium ions, R<sub>2</sub>C=N<sup>+</sup>H<sub>2</sub>X<sup>-</sup> iminium compounds, RC≡NH<sup>+</sup> nitrilium ions.

### Source:

PAC, 1995, 67, 1307 (*Glossary of class names of organic compounds and reactivity intermediates based on structure (IUPAC Recommendations 1995)*) on page 1353

PAC, 1994, 66, 1077 (*Glossary of terms used in physical organic chemistry (IUPAC Recommendations 1994)*) on page 1146