

### What are good nucleophiles?

Nucleophiles are chemical species that are electron-rich and have a tendency to donate a pair of electrons (a lone pair) to an electron-deficient species (an electrophile) in order to form a new chemical bond. Nucleophiles are commonly involved in chemical reactions such as nucleophilic substitution, addition reactions, and elimination reactions.

Nucleophiles can be negatively charged species, such as anions, or they can be neutral species with one or more lone pairs of electrons, such as amines, alcohols, and water. The basicity of a nucleophile is directly related to its ability to donate electrons, so stronger bases tend to be better nucleophiles.

Some examples of nucleophiles include hydroxide ion ( $\text{OH}^-$ ), cyanide ion ( $\text{CN}^-$ ), ammonia ( $\text{NH}_3$ ), and water ( $\text{H}_2\text{O}$ ).

