A nucleophilic atom is an electron-rich atom in a molecule or ion. Use the following generalizations to identify the most common types of electron-rich atoms.

1. An atom bearing one or more lone pairs but not a formal positive charge is electron-rich.

   eg. 1:

   ![Diagram 1]

   eg. 2:

   ![Diagram 2]

2. A formally neutral atom bearing a partial negative charge is electron-rich.

   eg. 1:

   ![Diagram 3]

   eg. 2:

   ![Diagram 4]

3. A carbon atom not bearing a formal or partial positive charge and multiple-bonded to another carbon atom is electron-rich.
eg. 1:

\[
\begin{align*}
\text{H} & \quad \text{H} \\
\text{C} = & \quad \text{C} \\
\text{H} & \quad \text{H} \\
\text{electron-rich}
\end{align*}
\]

eg. 2:

\[
\begin{align*}
\text{H} & \quad \text{C} = & \quad \text{C} = & \quad \text{H} \\
\text{electron-rich}
\end{align*}
\]

see also electrophilic atom, nucleophile, electrophile

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