When a Group-1A metal dissolves in liquid ammonia, metal atoms lose electrons, which are solvated by ammonia.

eg:

\[
\text{Na} + \text{NH}_3 (l) \rightarrow \text{Na}^+ + e^{-}(\text{NH}_3)
\]

Reduction of organic compounds using the solution of electrons in ammonia is known as dissolving-metal reduction.

eg:

\[
\begin{array}{c}
\text{CH}_3\text{C}≡\text{C}\text{CH}_3 \\
\text{CH}_3\text{C}≡\text{C}\text{CH}_3
\end{array}
\]

mechanism:

see also Lindlar catalyst, radical anion, Birch reduction

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Contributors

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