An oxidative substitution is a substitution in which a ligand in an organic compound is replaced by a metal atom that is oxidized (see oxidation) during the reaction.

eg:

\[
\text{CH}_3\text{I} + 2\text{Li} \rightarrow \text{CH}_3\text{Li} + \text{LiI}
\]

\[
\text{oxidation}
\]
\[
\text{\# = 0}
\]

\[
\text{oxidation}
\]
\[
\text{\# = +1}
\]

\[
\text{sum = 2(0)}
\]
\[
= 0
\]

\[
\text{sum = (+1) + (+1)}
\]
\[
= +2
\]

In this substitution, iodine atom in methyl iodide is replaced by a metal, namely, lithium, and lithium is oxidized during the reaction. Thus, this substitution is an oxidative substitution.

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Contributors

- Gamini Gunawardena from the OChemPal site (Utah Valley University)