The bond dissociation energy or, more completely, homolytic bond dissociation energy (symbol: BDE) of a covalent bond is the energy required to break the bond homolytically (see homolysis) under standard conditions.

eg. 1:

\[
\begin{align*}
\text{Cl} \text{--} \text{Cl} & \rightarrow 2\text{Cl}^* \\
\text{BDE (Cl--Cl)} = \Delta H^0 & = +59 \text{ kcal mol}^{-1}
\end{align*}
\]

eg. 2:

\[
\begin{align*}
\text{H}_3\text{C} \text{--} \text{H} & \rightarrow \cdot \text{CH}_3 + \cdot \text{H} \\
\text{BDE (H}_3\text{C--H)} = \Delta H^0 & = +104 \text{ kcal mol}^{-1}
\end{align*}
\]

The bond dissociation energy of a bond is a measure of its strength. The higher the bond dissociation energy, the stronger the bond.

**Contributors**

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