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:

\[ \text{Cl} \quad \text{Cl} \rightarrow 2 \text{Cl} \text{•} \text{•} \]

\[ \text{BDE (Cl—Cl)} = \Delta H^\circ = + 59 \text{ kcal mol}^{-1} \]

eg. 2:

\[ \text{H}_3\text{C} \quad \text{H} \rightarrow \cdot \text{CH}_3 + \cdot \text{H} \]

\[ \text{BDE (H}_3\text{C—H)} = \Delta H^\circ = +104 \text{ kcal mol}^{-1} \]

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

Contributors

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