Angle strain is the increase in potential energy of a molecule due to bond angles deviating from the ideal values.

eg: Cyclopropane

Due to the rigidity of the cyclopropane ring it could assume only one conformation, namely the planar conformation.

Each carbon atom in the cyclopropane ring is tetracordinate. The ideal bond angle at a tetracordinate carbon atom is 109.5°. In the planar cyclopropane ring the internal bond angle at each carbon atom is 60°. Consequently, the cyclopropane ring suffers from angle strain.

• see also torsional strain, steric strain

Contributors

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