The cyclohexane ring (1), being large, is flexible and, therefore, could assume an infinite number of conformations.

![Cyclohexane Ring](image)

The most stable conformation of the cyclohexane ring is called the chair conformation. The chair conformation is customarily drawn either as 2 or as 3, which are mirror images of each other.

![Chair Conformations](image)

In the chair conformation, the internal bond angle at a carbon atom is 111.4°, very close to the ideal value, 109.5°. Hence, the angle strain in the chair conformation is very small. The dihedral angle between two hydrogen atoms on adjacent carbon atoms on the same side of the ring is 55°. Hence, the torsional strain in the chair conformation is small. The total strain in the chair conformation is small and, therefore, the chair conformation is very stable.

see also boat conformation, axial bond, equatorial bond, A Value

Contributors

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