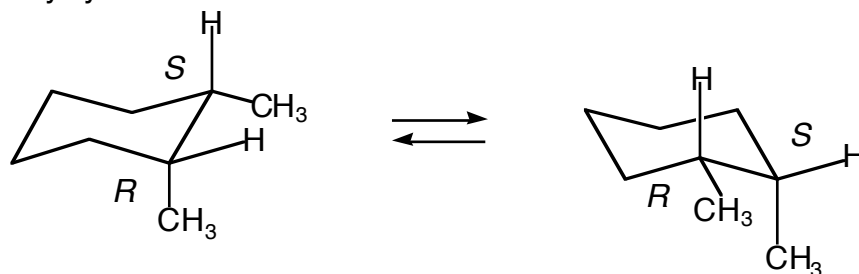


Answers to Problem 43, Chemistry 301X - 2006

The compound must be ring flipping into its enantiomer at room temperature. That is the only way that optical activity can be lost as a function of temperature.

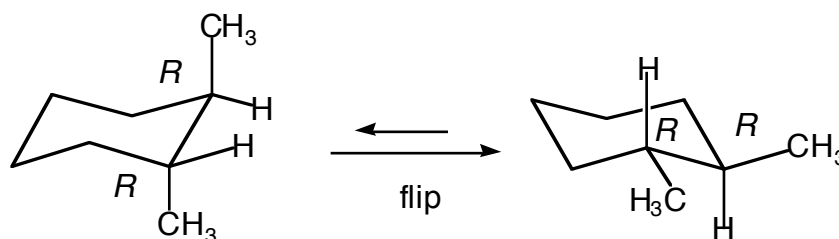
Only the cis- (R,S) form can ring flip to its enantiomer:

(R,S) -1,2-dimethylcyclohexane.



These two structures are enantiomers

(R,R) -1,2-dimethylcyclohexane must be trans, and does not flip into its enantiomer.



These two structures are diastereomers