

Cram's Rule:-

Felkin-Anh Model →an alternative to Cram's Model.

When a new chiral centre is created in a molecule which already contains one or more, two diastereomers are formed in unequal amounts. The reaction is known as asymmetric synthesis and the existing chiral centre is said to bring about asymmetric induction.

When a ketonic group attached to a chiral centre ($\text{RCOCHR}_L\text{R}_M\text{R}_S$ in which L, M and S stands for large, medium and small respectively) undergoes nucleophilic addition with organometallic or metal hydride reagents, two diastereomeric products results, erythro and threo of which one predominates. The relative configuration of the predominant isomer is predicted by Cram's Rule based on some arbitrary models.

In the Open Chain model(I) , the C=O, Group is flanked by two smaller groups (R_S and R_M) with the large group (R_L) nearly eclipsed with R.