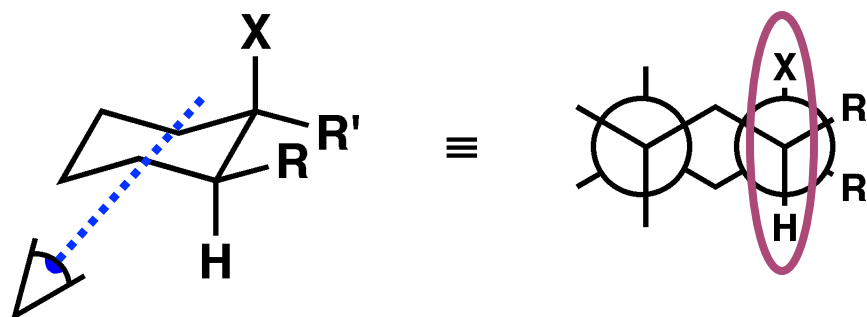


# [E2] Pathway in Cyclic Compounds

In cyclic compounds, anti-periplanarity demands that the groups to be eliminated occupy axial positions.

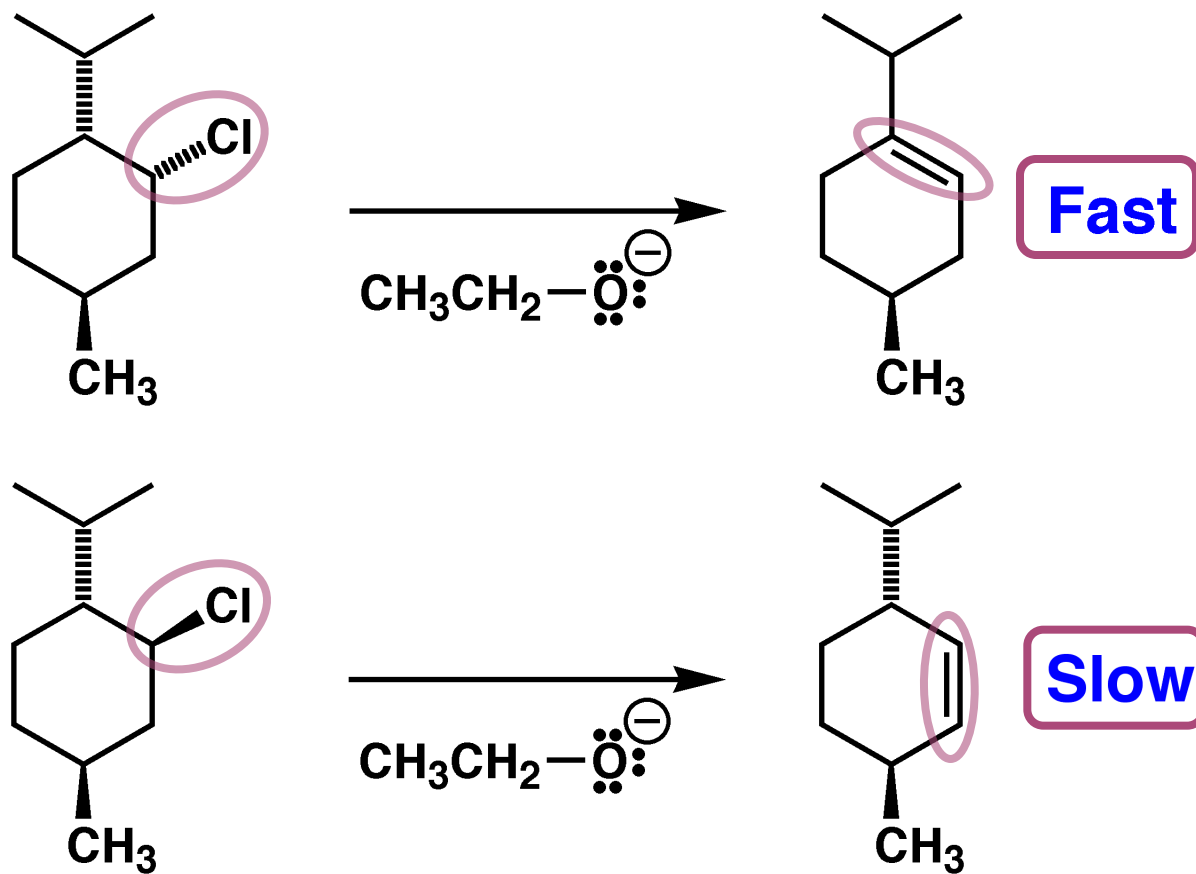


This requirement has important consequences on **rates** and **regiochemistry** of elimination reactions involving substituted cyclohexanes

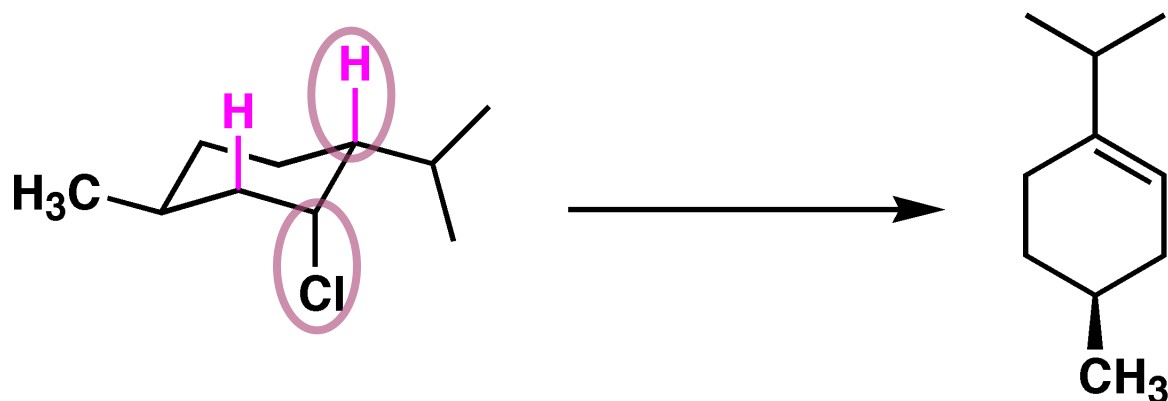
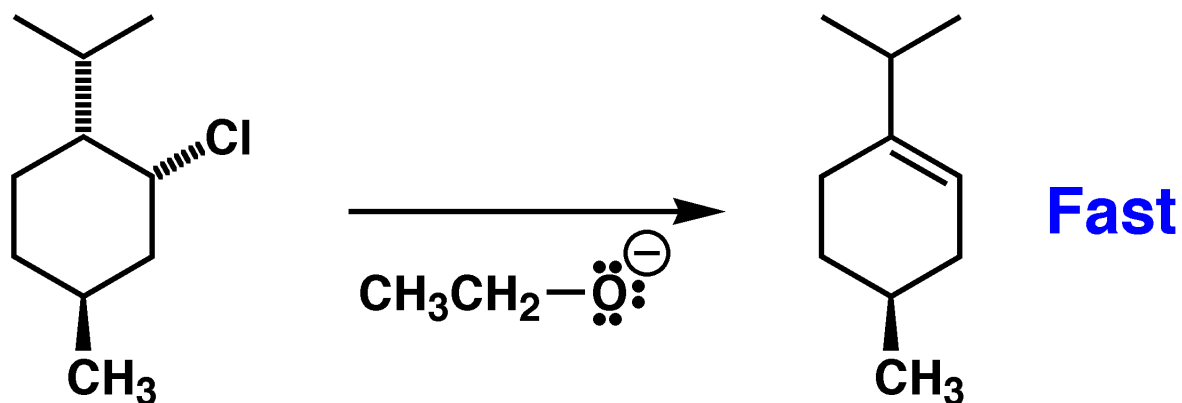


# [E2] Elimination in Substituted Cyclohexanes

Explain the reason for the difference in relative **rates** and **regiochemistry** in the following examples:



# [E2] Reactions in Substituted Cyclohexanes: Example A

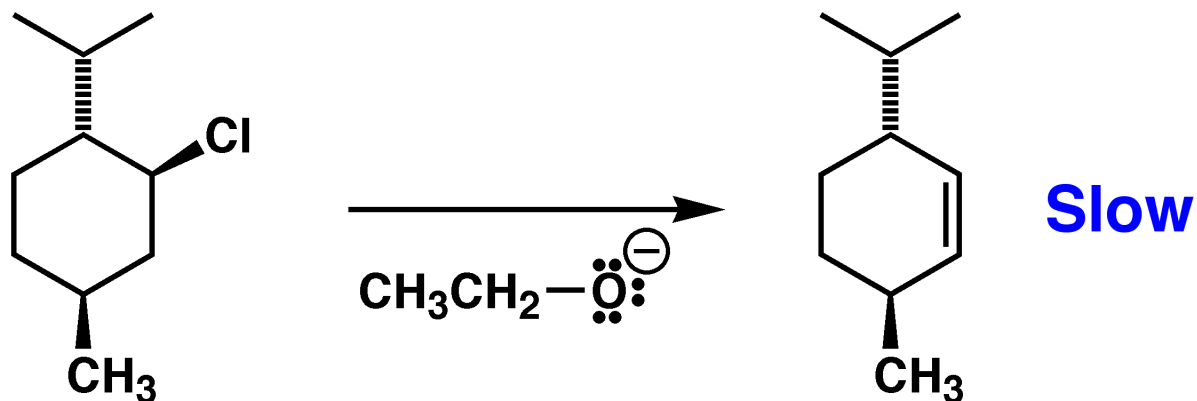


Two anti-periplanar pathways are possible from the most stable chair conformation. The observed product follows the pathway leading to the more substituted alkene

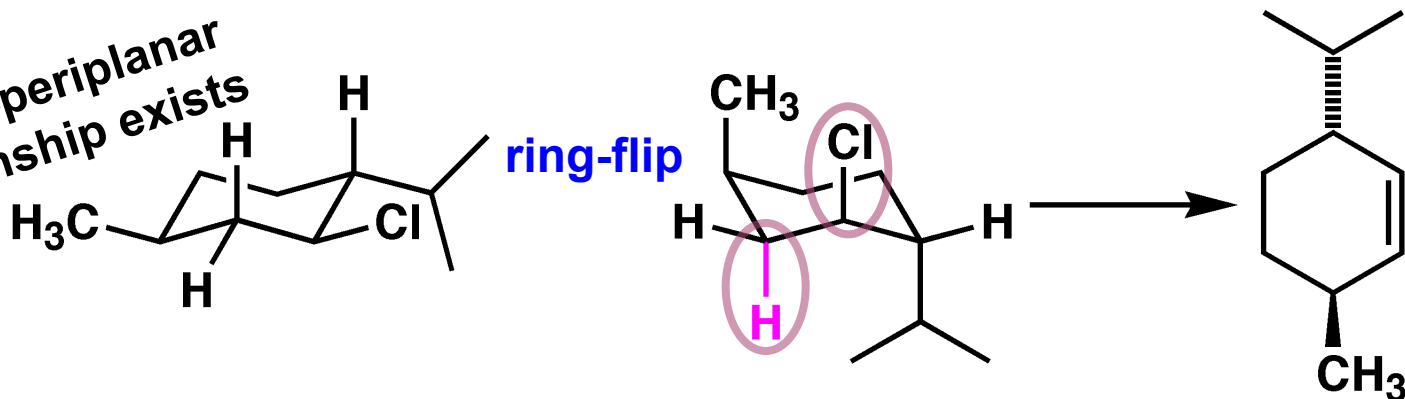
<http://www.chemtube3d.com/EliminationE2regioselectiveA.html>

Elimination	E2 bimolecular examples	E2 to form diene
Electrophilic aromatic substitution	E1 unimolecular	E2 Stereoselective for E
Enols and Enolates as nucleophiles	E1cb unimolecular conjugate base	E2 Stereospecific Acyclic
Periodic reactions		E2 Cyclohexyl Diast A
		E2 Cyclohexyl Diast B

# [E2] in Substituted Cyclohexanes: Example B



No anti-periplanar relationship exists



<http://www.chemtube3d.com/EliminationE2regioselectiveB.html>

An anti-periplanar arrangement exists only in an unstable conformation (**slow rxn rate**) Only one anti-periplanar pathway exists (**regiochemistry**)

Elimination	E2 bimolecular examples	E2 to form diene
Electrophilic aromatic substitution	E1 unimolecular	E2 Stereoselective for E
Enols and Enolates as nucleophiles	E1cb unimolecular conjugate base	E2 Stereospecific Acyclic
Pericyclic reactions		E2 Cyclohexyl Diast A
		<b>E2 Cyclohexyl Diast B</b>