

# Epoxidation Of Alkenes, And Epoxides

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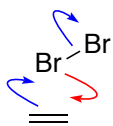
from chapter(s) \_\_\_\_\_ in the recommended text

## A. Introduction

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## B. Reagents And Mechanism

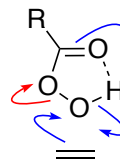
pushing



bromination



epoxidation  
general  
*X is leaving group*

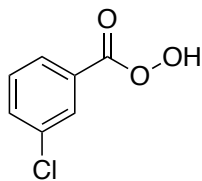


epoxidation  
with peracid

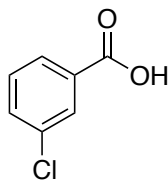
3

pushes

electrophilic



mCPBA



product after donation  
of oxygen



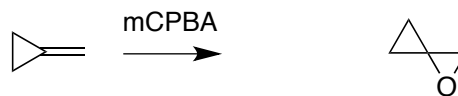
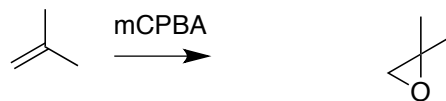
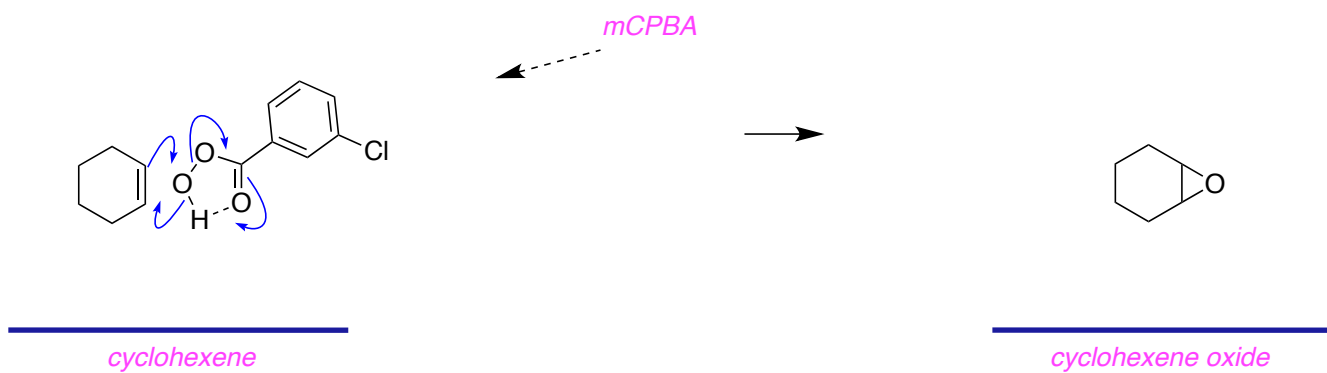
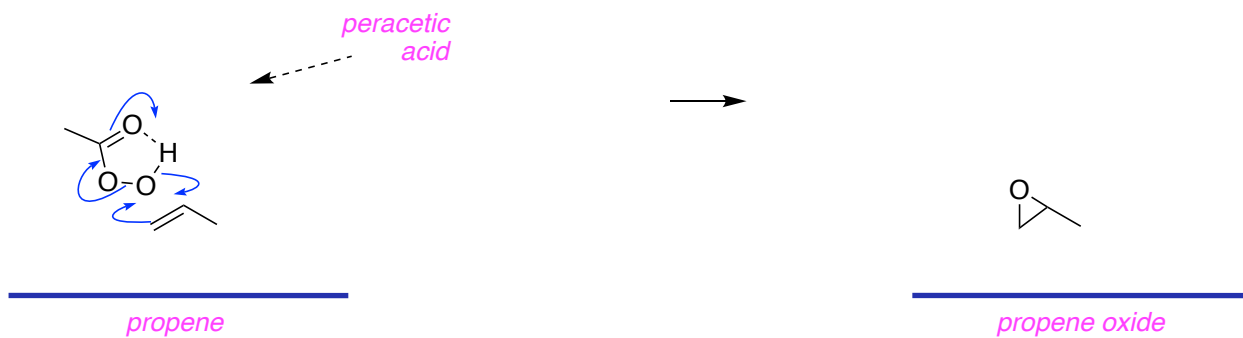
dimethyldioxirane

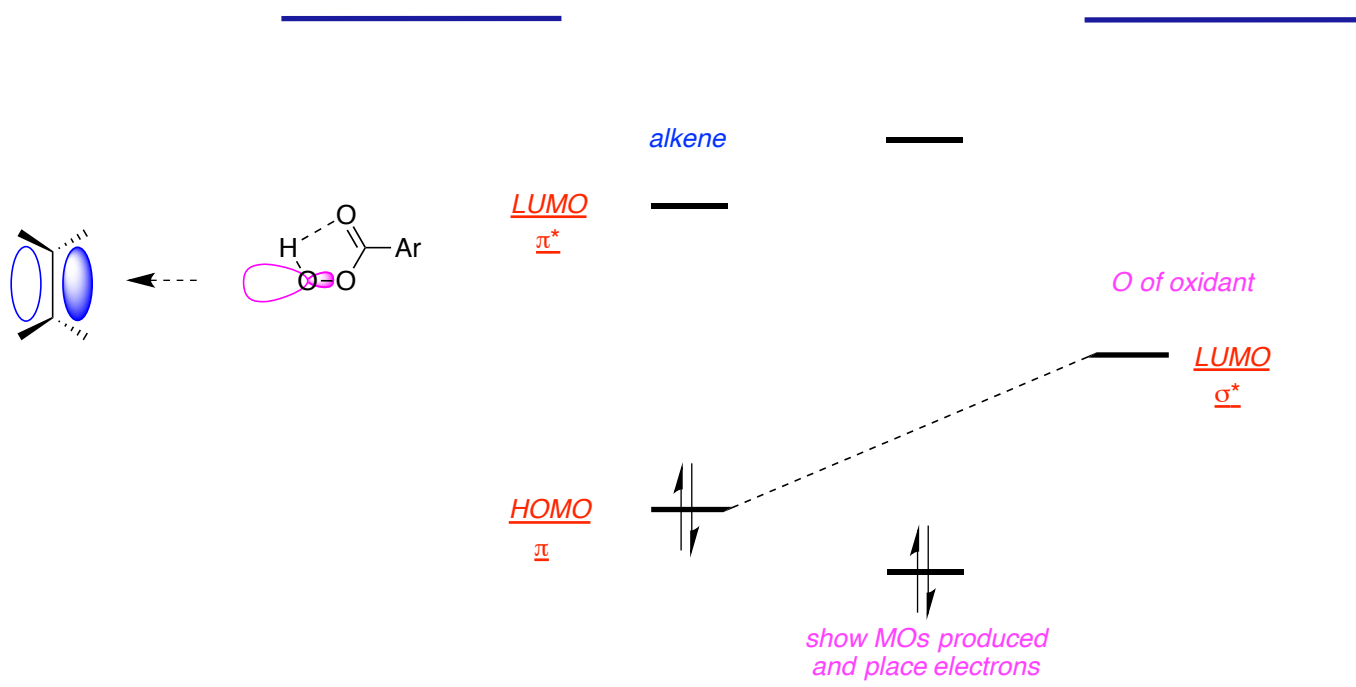
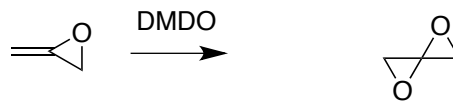
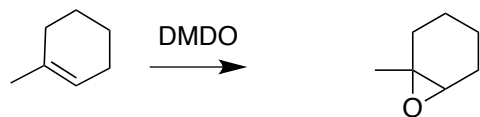


product after donation  
of oxygen

electrophilic  
electrophile.

addition reaction.

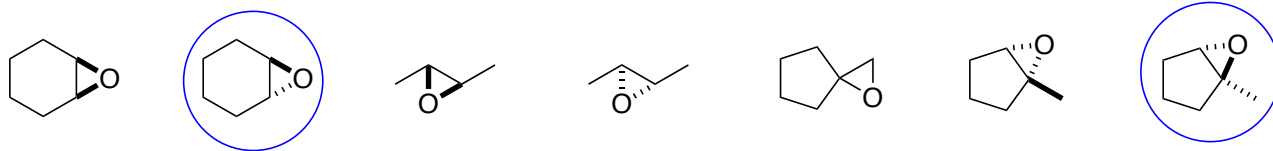




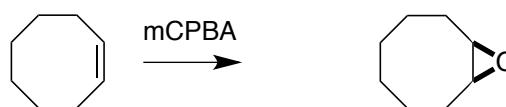
### C. Rates Of Epoxidation



## D. Stereospecificity

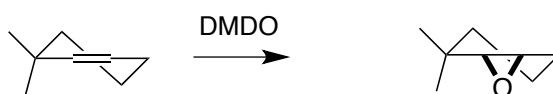
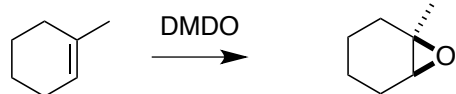


conserved



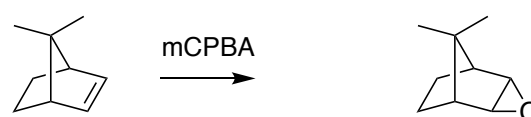
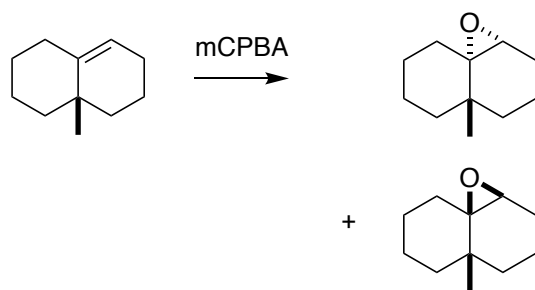
cis

cis



cis

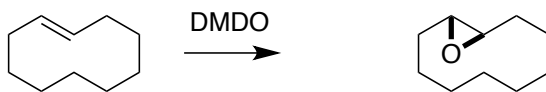
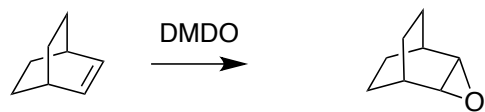
cis



cis

cis

show sterically least hindered product



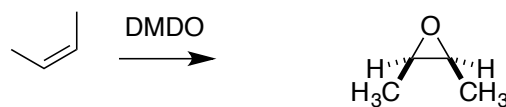
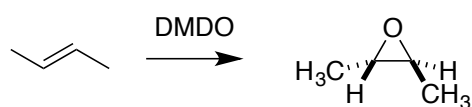

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cis

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cis

always gives the cis

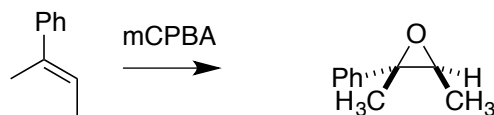
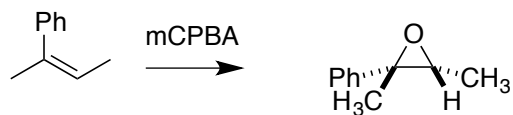



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trans

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cis

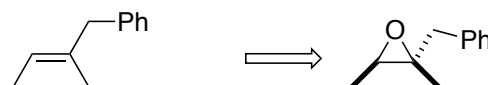
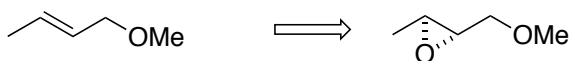
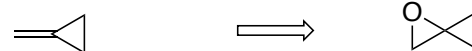



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cis

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trans

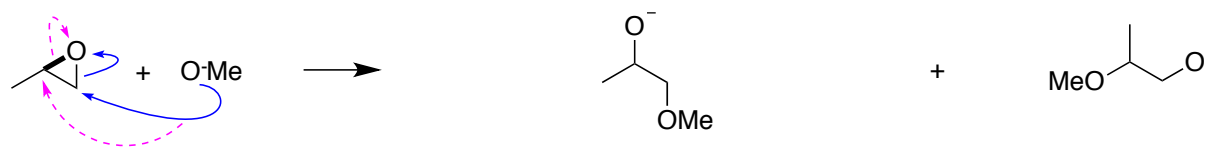


## E. Regioselectivity Of Epoxide Ring Opening Reactions

Under Neutral Or Basic Conditions

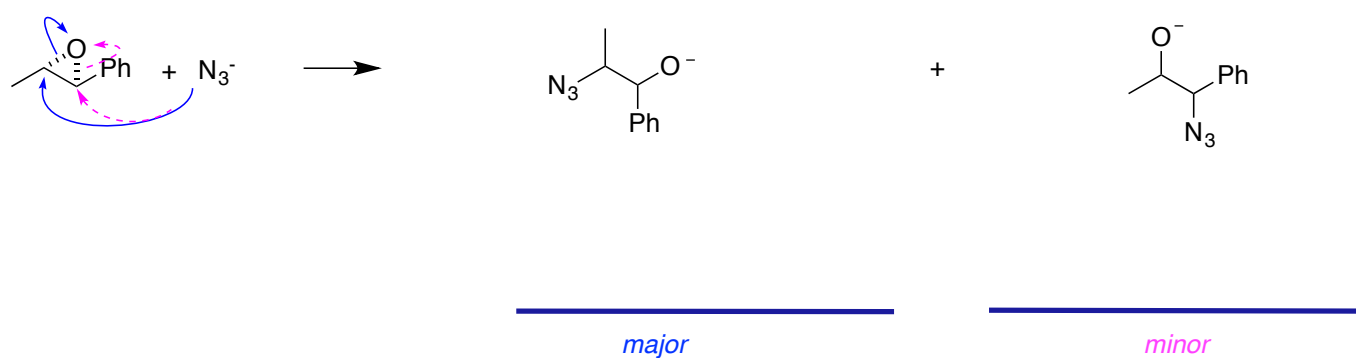
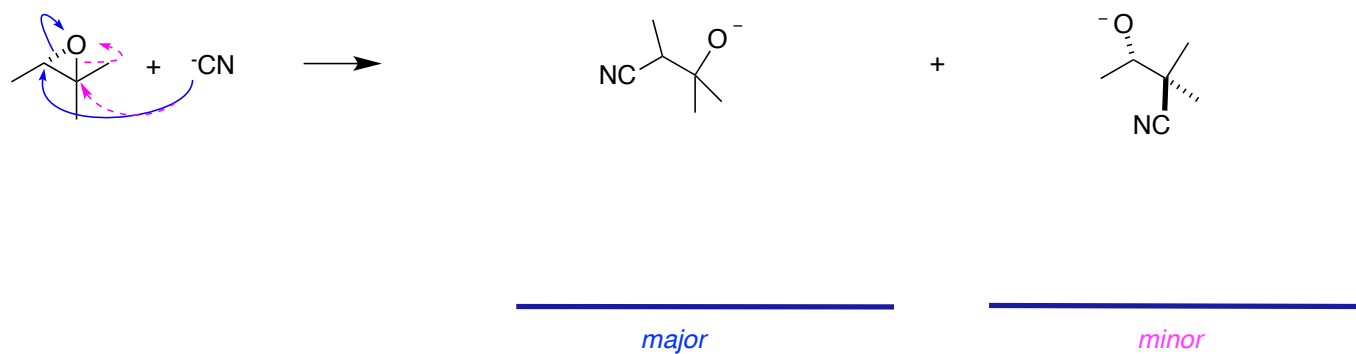
*regioisomeric* products

*steric* factors.



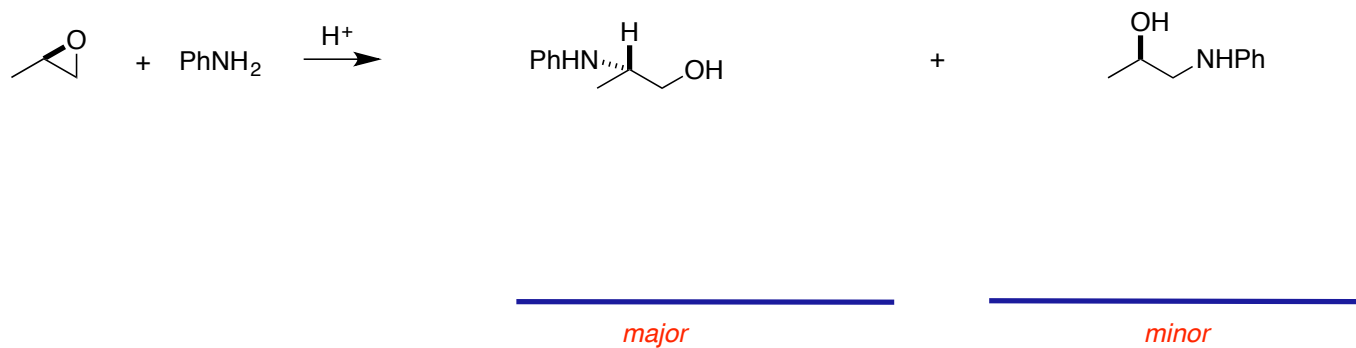
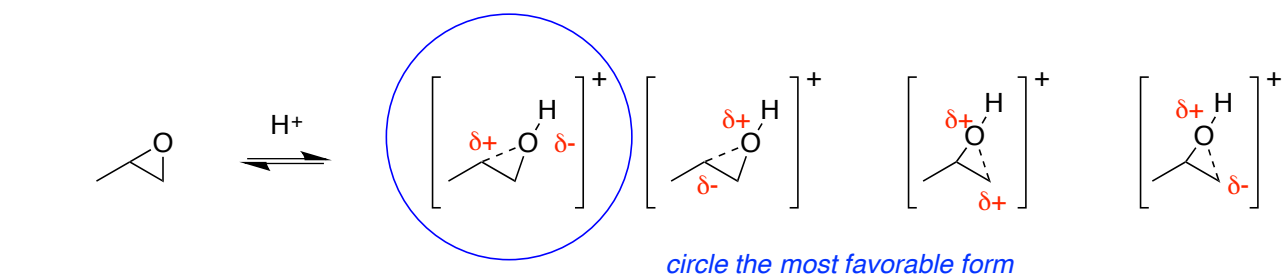
major

minor

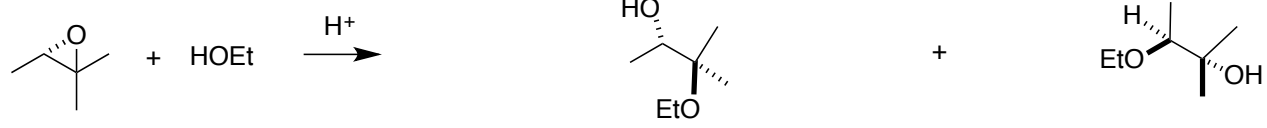


regioselective and not regiospecific.

### Under Acidic Conditions

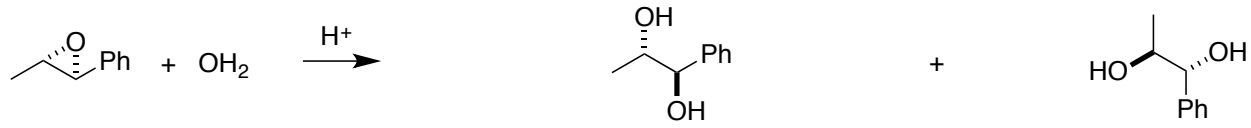






major

minor



major

minor

