Electrophilic Attack On Benzene

from chapter(s) _____ in the recommended text

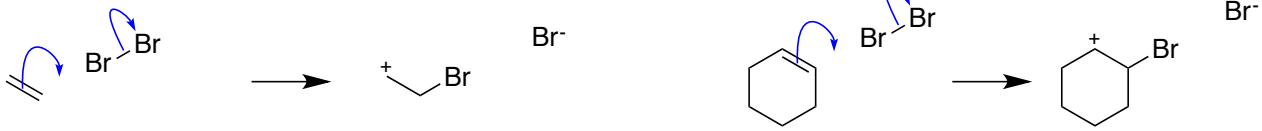
A. Introduction

.

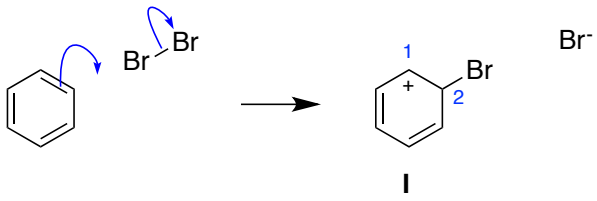
B. Electrophilic Bromination Of Alkenes And Benzene Compared

First Step: Approach Of Electrophile

is not



do distribute



I

1 hydrogen atoms on C^1 and *1* on C^2.

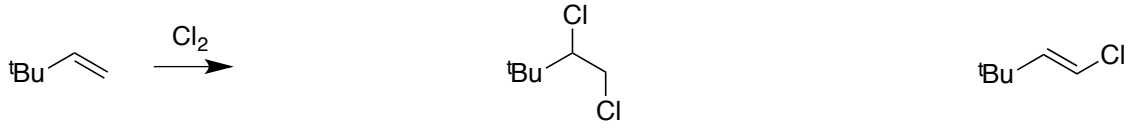
faster than on benzene because for benzene *aromatic*

Second Step: Loss Of Positive Charge

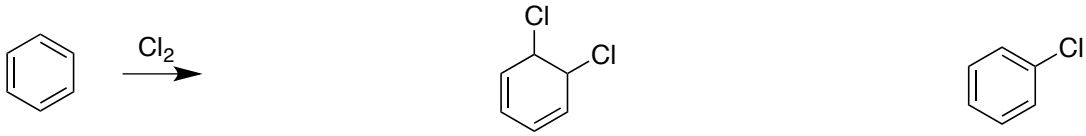
proton.

aromatic

addition *substitution*

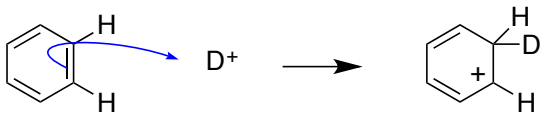


addition product *possible substitution product*



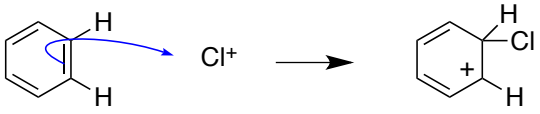
addition product *substitution product*

heavier isotope
the same as to
attracted to)

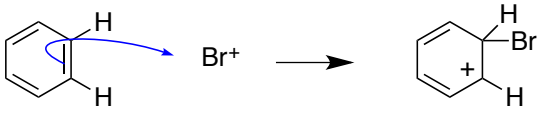


intermediate
non-aromatic.

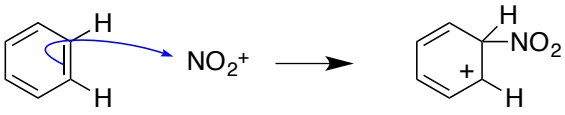
loses
slow.



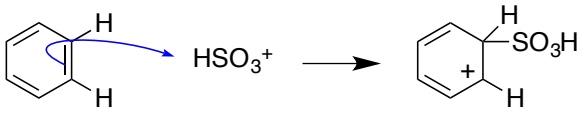
Cl+



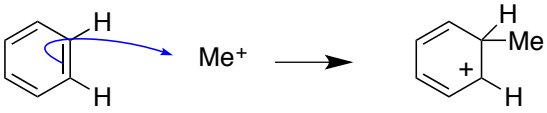
Br+



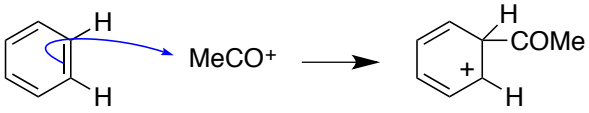
a nitronium ion, NO_2^+



a sulfonium ion, HSO_3^+

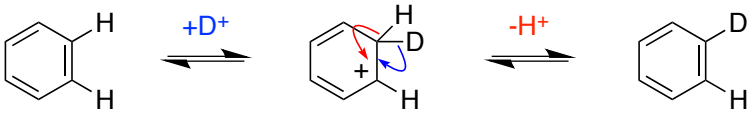


a methyl carbocation, Me^+



an acylium ion, $MeCO^+$

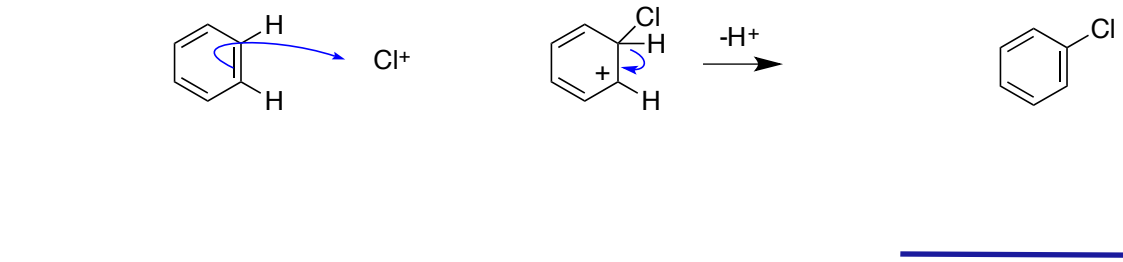
reversible.

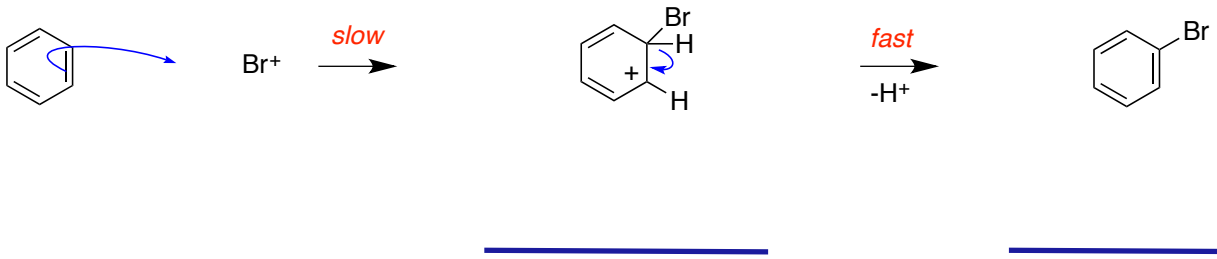


C. Halogenation Of Benzene

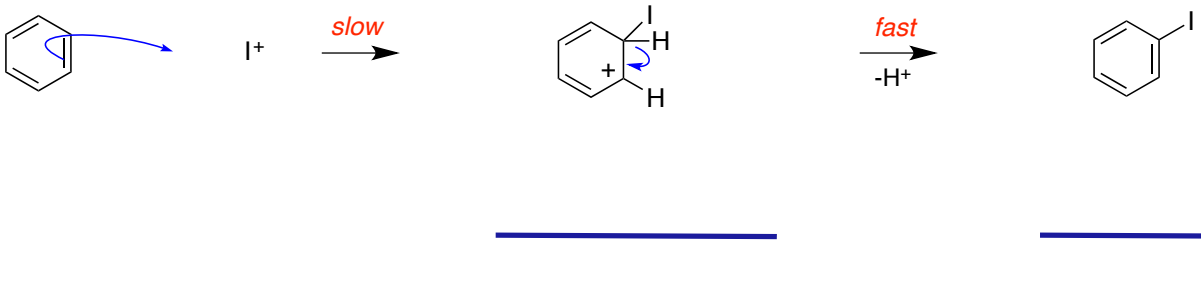
insufficiently

acid





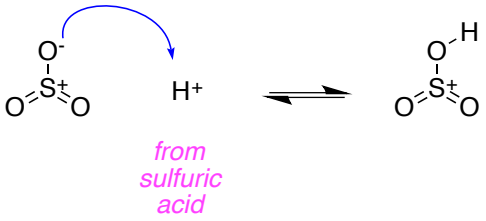
bromination

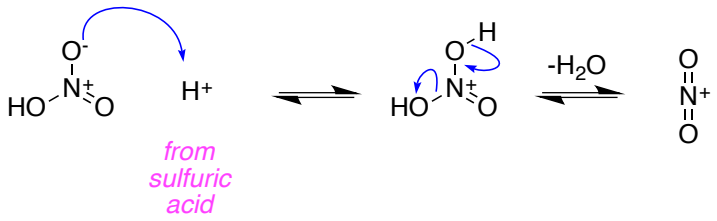


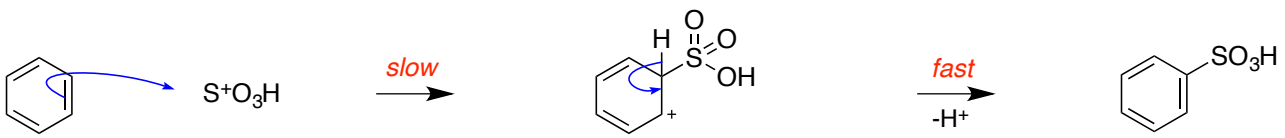
iodination

D. Sulfonation And Nitration Of Benzene

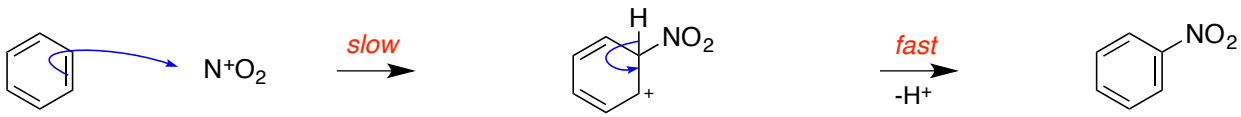
strong
oleum.
protonating.







sulfonation

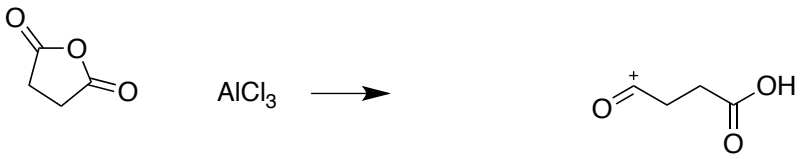


nitration

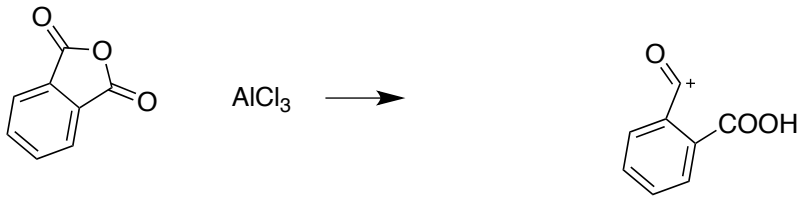
E. Acylation Of Benzene (Friedel-Crafts)

acylium ions

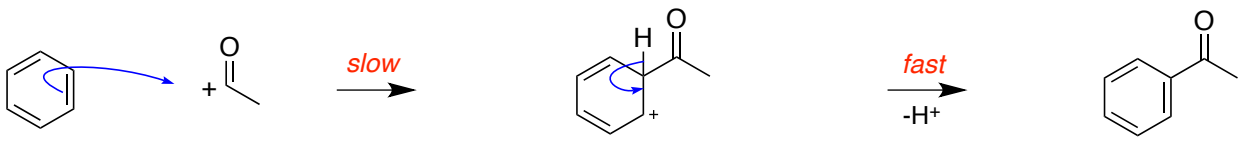
acylium *acylium*



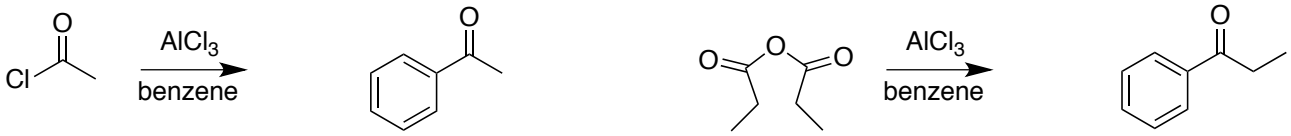
acylium



acylium



ketones.
less electron rich
do not tend to



equivalent.

F. Alkylation (Friedel-Crafts)

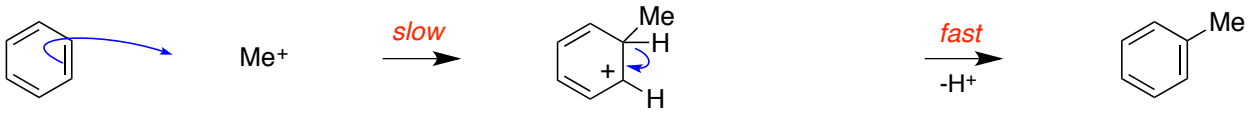
carbocations.

Lewis *acids*

do not

not to be

is not a concern



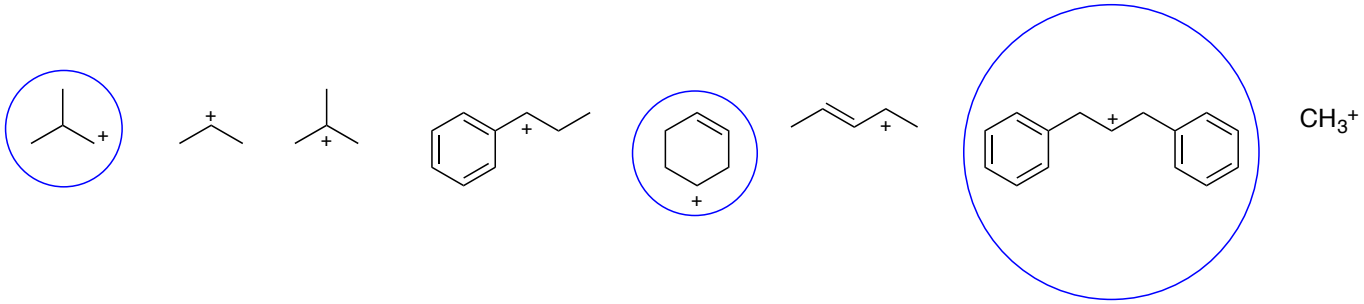
methylation

alkylbenzenes, these are *more*
do
are

Carbocation Rearrangements Revisited

hydride

more



decreases