

Organic chemistry

klein chapter 9

alkenes addition



**ASSIGN
BUSTER**

Are addition reactions exothermic or endothermic? exothermic
Are elimination reactions exothermic or endothermic? endothermic
Reactions that proceed with a regiochemical preference are said to be... ?
regioselective
Does a peroxide cause Markovnikov or anti-Markovnikov? anti-Markovnikov
Can there be a carbocation rearrangement with hydrohalogenation? yes
What is the rate-determining step of a hydrohalogenation--proton transfer or nucleophilic attack? proton transfer
Products of hydrohalogenation where chirality is present tend to be... what kind of mixtures? racemic
Does acid-catalyzed hydration proceed via Markovnikov or anti-Markovnikov? Markovnikov
Do more alkyl substituents branching off a side of a double bond increase the rate of an acid-catalyzed hydration reaction? yes
What is used for the initial proton transfer in acid catalyzed hydration... hydronium ion or water? hydronium ion
What is used as nucleophile to attack carbocation during acid catalyzed hydration... hydronium ion or water? water
What functions to deprotonate the oxonium ion during acid catalyzed hydration... hydronium ion or water? water
Does increasing the dilution of an acid move the equilibrium toward producing alcohol during acid-catalyzed hydration? yes
Products of acid-catalyzed hydration where chirality is present tend to be... what kind of mixtures? racemic
What results from acid-catalyzed hydration? alcohol, H_3O^+
What are the reagents for oxymercuration-demercuration? (In addition to a nucleophile such as water) $\text{Hg}(\text{OAc})_2$, NaBH_4
Is there carbocation rearrangement with oxymercuration-demercuration? no
Does oxymercuration-demercuration proceed via Markovnikov or anti-Markovnikov? Markovnikov
Is oxymercuration-demercuration syn or anti? anti
What are reagents for hydroboration-oxidation? BH_3 , THF, H_2O_2 , NaOH
Is hydroboration-oxidation

Markovnikov or anti-Markovnikov? anti-Markovnikov
What kind of product does hydroboration-oxidation create? alcohols
hydroboration-oxidation syn or anti? syn
Does the -OH in hydroboration-oxidation go to most-substituted or least-substituted? least-substituted
Is metal a reagent in catalytic hydrogenation? yes
Is H₂O a reagent in catalytic hydrogenation? no
Is H₂ a reagent in catalytic hydrogenation? yes
Is catalytic hydrogenation syn or anti? syn
When the alkene is symmetrical, during catalytic hydrogenation you must watch out for... this type of compound? meso
Metal is what type of catalyst... heterogeneous or homogeneous? heterogeneous
Wilkinson's catalyst is what type of catalyst... heterogeneous or homogeneous? homogeneous
Which halogens work with halogenation (full names, alphabetical)? bromine, chlorine
Is halogenation anti or syn? anti
What is the reagent for halogenation (in addition to halogen itself, abbreviation) CCl₄
Can the configuration of the starting alkene (cis/trans) determine the configuration of the product for halogenation reactions? yes
Is halogenation syn? no
What is the reagent for halohydrin formation? (in addition to the halogen) H₂O
Does OH end up at more-substituted or less-substituted in halohydrin formation? more-substituted
Is halohydrin formation anti or syn? anti
How many -OH groups result from dihydroxylation? 2
What are the reagents for performing anti dihydroxylation? RCO₃H, H₃O⁺
What is a common RCO₃H used to create an epoxide during anti dihydroxylation? MCPBA
What kind of ring is created on an epoxide? (It's a three-membered, cyclic _____.) ether
What are the most common reagents for syn dihydroxylation? OsO₄, NaHSO₃
In oxidative cleavage, each C=C double bond becomes how many C=O bonds? 2
What is the most common reagent for oxidative cleavage? O₃
A peroxide is used in oxidative cleavage for ...

reductive workup? or oxidative workup? oxidative workup DMS is used in
oxidative cleavage for ... reductive workup? or oxidative workup? reductive
workup ONORGANIC CHEMISTRY KLEIN CHAPTER 9 ALKENES ADDITION
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