Quadrant II – Transcript and Related Materials

Programme: Bachelor of Science (First Year)

Subject: Chemistry

Course Code: CHC 101

Course Title: Inorganic and Organic Chemistry Section - B

Unit 3: Aliphatic Hydrocarbons

Unit Number: 46

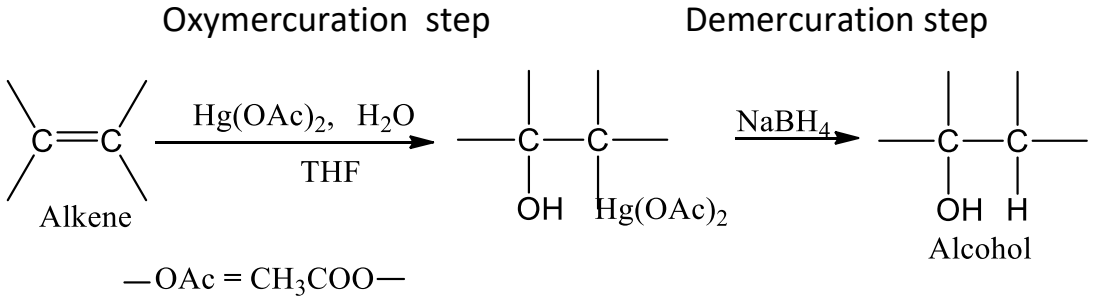
Module Name: Alkenes (upto 5 carbons). Reactions: Oxymercuration – Demercuration, Hydroboration – Oxidation

Name of the Presenter: Ms. Shubhada Gawandi

Notes:

Oxymercuration – Demercuration Reaction

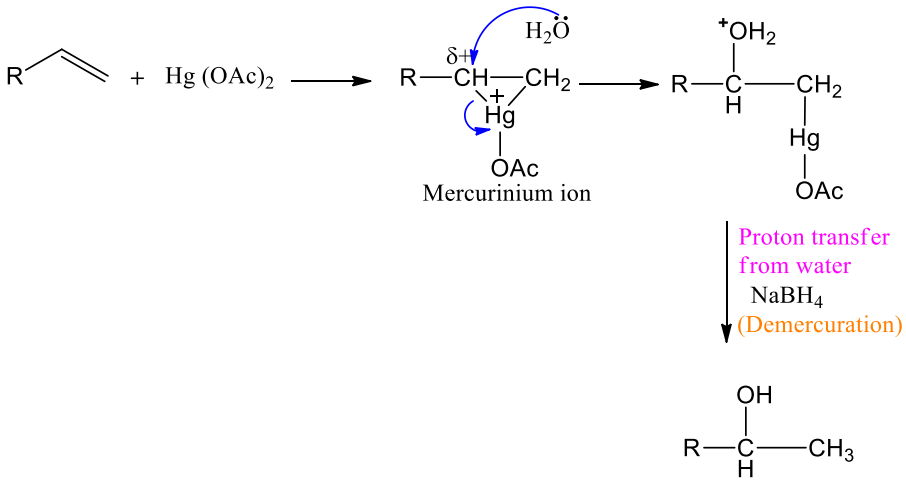
Reaction in which alkenes react with the solution of aqueous Mercuric acetate, [$(CH_3COO)_2Hg$] in Tetrahydrofuran (THF) to form the intermediate which on reduction with Sodium borohydride ($NaBH_4$) gives an alcohol.



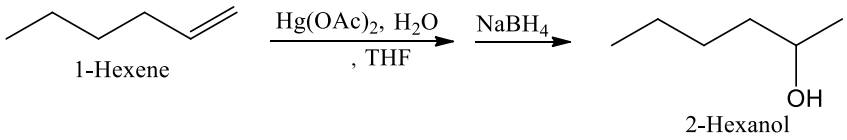
Oxymercuration – Demercuration is highly regioselective and gives alcohols corresponding to **Markovnikov's addition** of water to the carbon-carbon double bond.

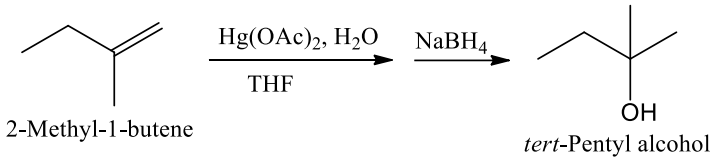
During oxymercuration addition of –OH and –HgOAc across the carbon carbon double bond takes place.

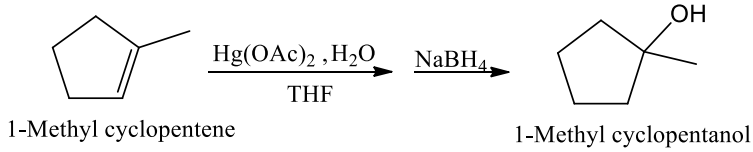
During demercuration replacement of HgOAc with Hydride takes place.

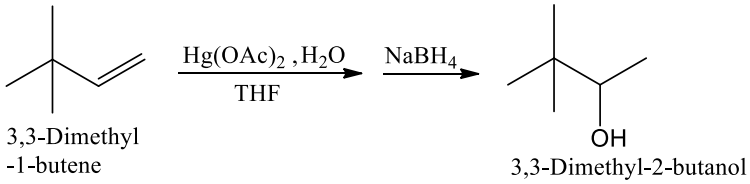


Examples:



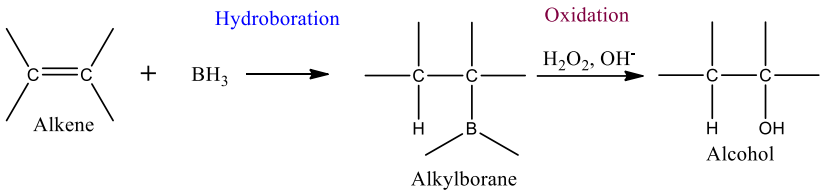






Hydroboration – Oxidation Reaction

The Hydroboration-Oxidation is a two-step pathway used to produce alcohols from a reaction of an alkene and borane followed by oxidation in presence of hydrogen peroxide. This reaction gives the Anti-Markovnikovs addition product.



Examples: