Catalytic Hydrogentation

1 Reaction and Mechanism

Catalytic Hydrogenation

Reaction:
$$R_4$$
 R_2 R_3 R_4 R_4 R_3 R_4 R_4 R_5 R_4 R_5 R_6 R_8 R_8 R_8 R_9 R_9

KingDraw

2 Reaction Observations

- i. Example of additon and Redox reaction.
- ii. syn additon
- iii. Example of surface phenomenon and involvs 4 MCTS.
- iv. $Pd/BaSO_4$ a.k.a Lindlar's Catalyst and Quinoline is added as poison.

- v. In case of conjugated diene, 1,4 addition takes place due to 6 MCTS.
- vi. Reactivity,

C-S bond > Alkyne > $Ar-NO_2 > R-COCl$ > Alkene > $RCHO > RCOR > Benzene^* > RCOOH^* < acid derivative^*$ * require heat

$$\propto \frac{1}{\text{Steric Hindrance}}$$

$$\propto \frac{1}{\text{Stability of Alkene}}$$