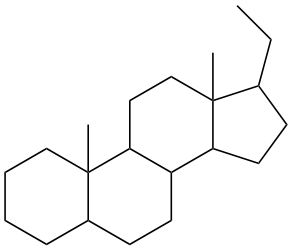
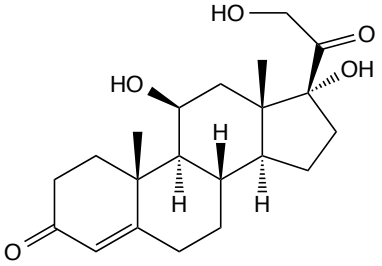
Steroid Nomenclature:



Pregnane

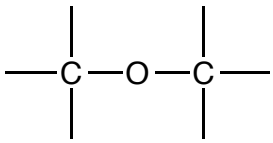


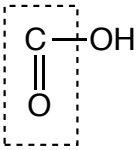
Cortisol

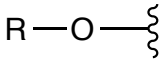
Ketone --> "one" 3, 20-dione

Groups that are above the ring system: β
Groups that are below the ring system: α
Cortisol can also be named: 11β,17α,21-trihydroxypregn-4-ene-3,20-dione

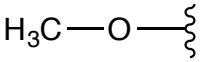
Nomenclature of Ethers:



NOT 



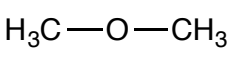
alkoxy group



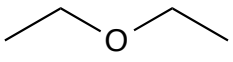
methoxy

Name the alkyl groups
Add "ether"
Ethers take lower priority than alcohols when both are present

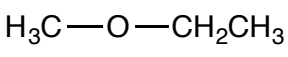
Examples:



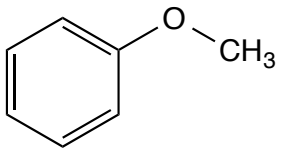
dimethyl ether



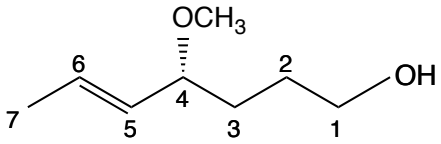
diethyl ether
ethyl ether
ether



ethyl methyl ether

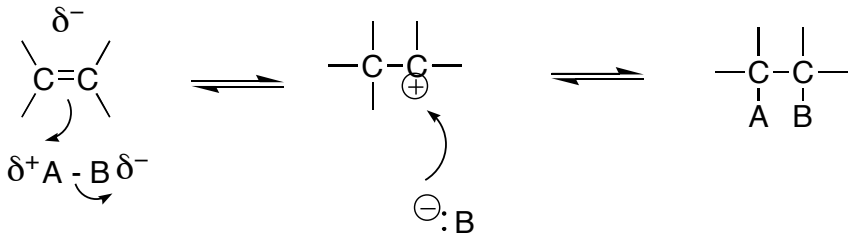


methyl phenyl ether
ansiole



(R)-4-methoxy-5-hepten-1-ol

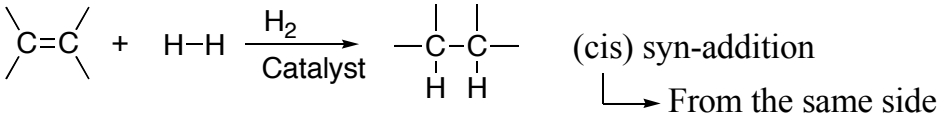
Reaction of Alkenes: Addition Reactions



Reverse is called an elimination reaction

Hydrogenation:

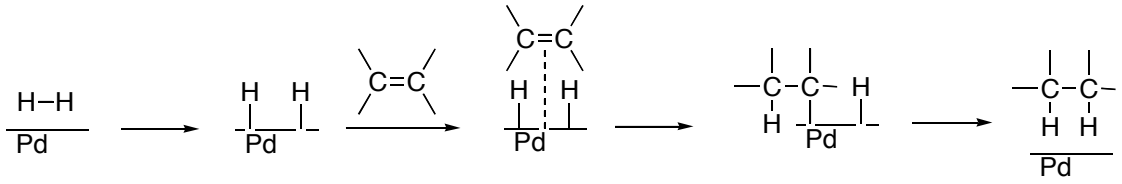
- Addition of H_2
- Requires a catalyst
- Stereospecific reaction



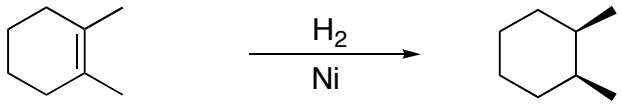
Catalyst is one of Ni (Nickel), Pd(Palladium), Pt(Platinum)

Catalyst: Lowers the activation energy of a reaction (transition state) but is not permanently transformed

Mechansim



Hydrogenation with these catalyst proceeds with syn addition (from the same side), giving the cis-product.

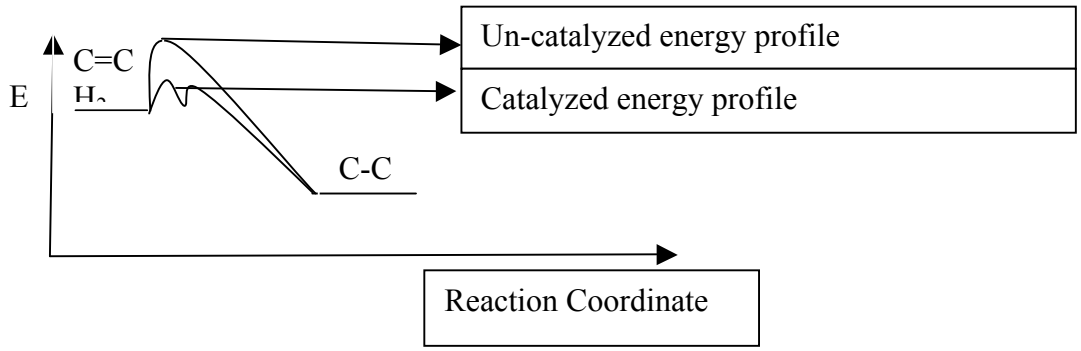


1,2-dimethylcyclohexene *cis*-1,2-dimethylcyclohexane

The starting material and products are achiral because of an internal mirror plane of symmetry.

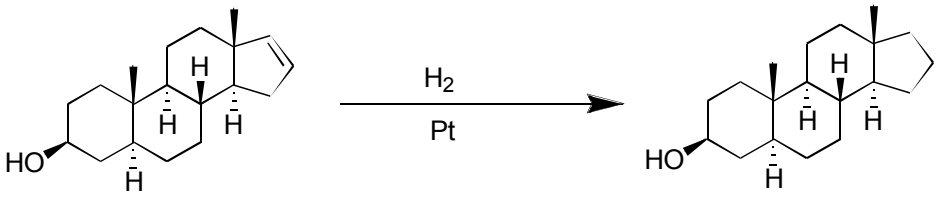
These two products are identical.
Achiral, but with stereogenic centres
--> meso compounds

Energy Diagram for the Reaction

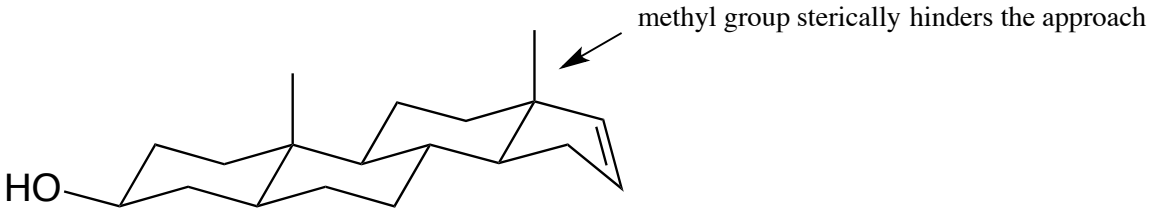


The catalyst provides an alternate route to the reaction

Example



This is a male hormone (androstane skeleton)



H_2 comes from the bottom because the methyl group adjacent to the alkene shields the top face