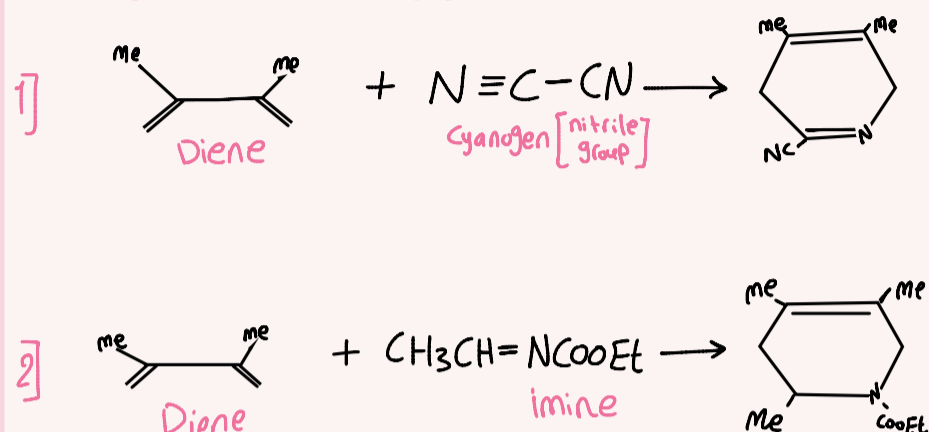


# Diels-alder reactions

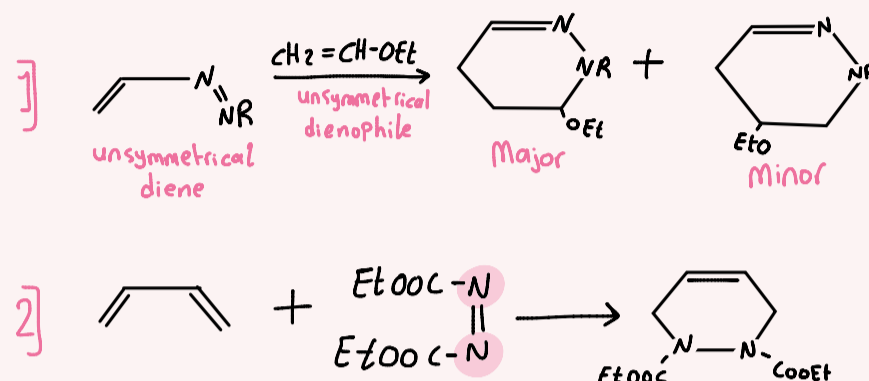
Diene + Dienophile  $\longrightarrow$  Unsaturated 6 membered rings  
 $4\pi$                        $2\pi$

● Example : 1,3-Butadiene + Ethylene  $\longrightarrow$  Cyclohexene

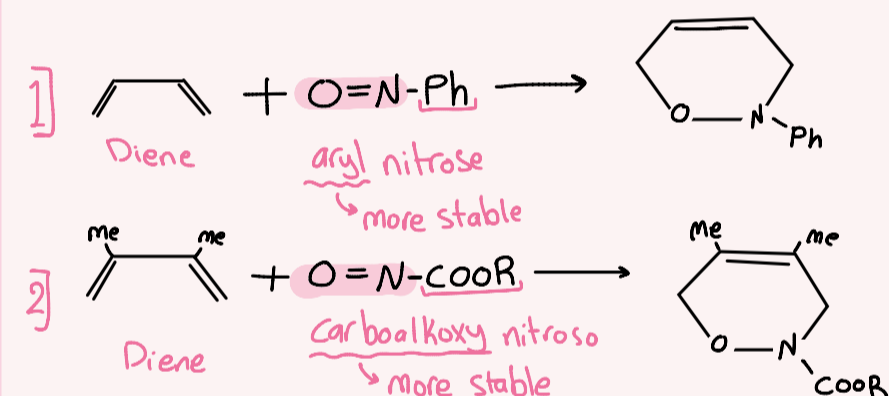
## Synthesis of pyridine derivatives



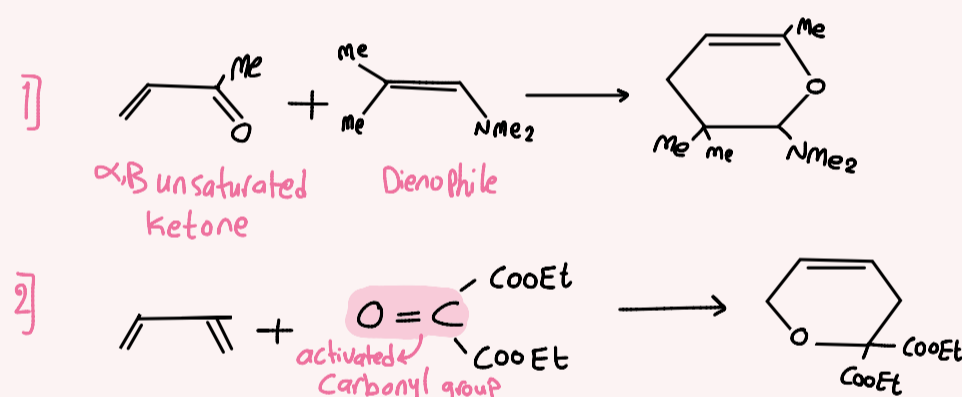
## Synthesis of Pyridazines (hetero diels-alder)



## Synthesis of 1,2 - oxazine derivatives



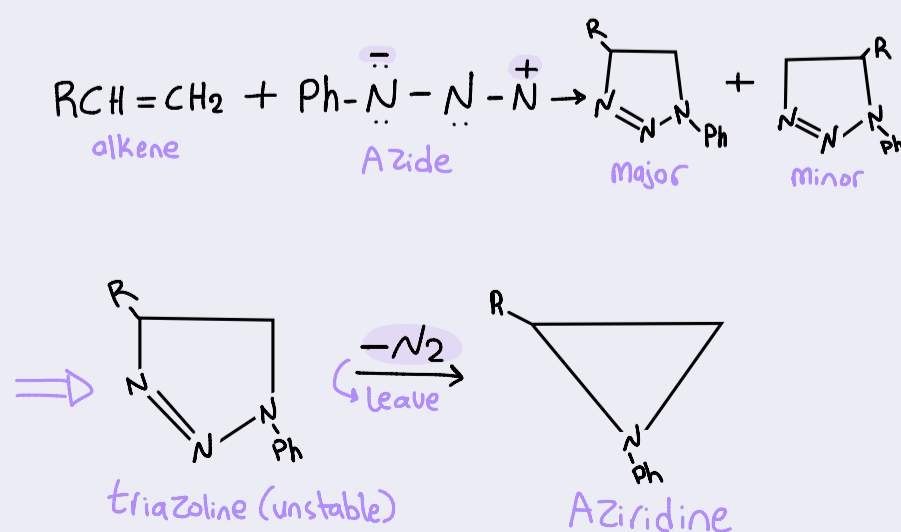
## Synthesis of Oxygen Heterocycles (Inverse electron demand Cycloaddition)



# Dipolar cycloadditions

1,3-dipoles + dipolarophiles (alkenes, alkynes, heteroatom derivatives)  $\longrightarrow$  5 membered heterocycles

## 1,2,3-Triazole derivatives from Azides



## Isoxazole derivatives from Nitrile Oxides

