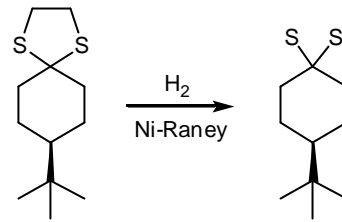
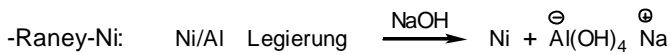
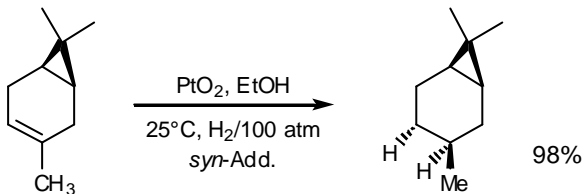
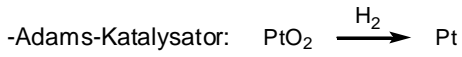


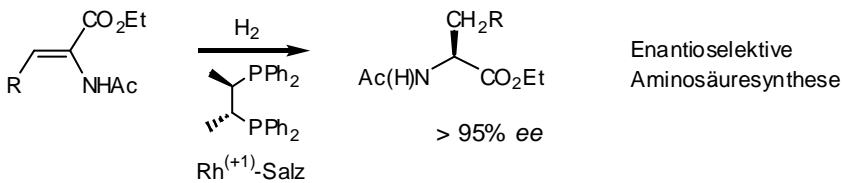
1) Reduktion

Reduktionsmittel

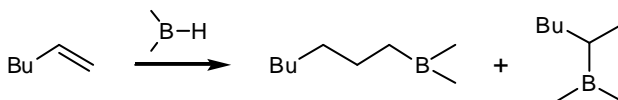
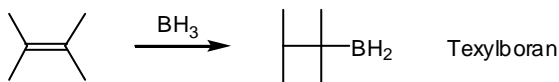
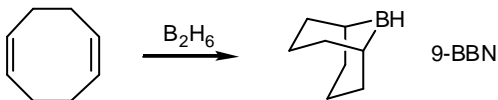
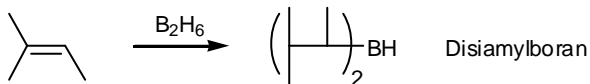
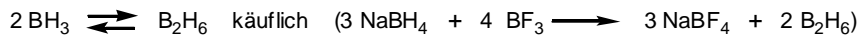
1.1. Katalytische Hydrierung



1.2. Homogene Hydrierung $\text{CIRh}(\text{PPh}_3)_3$ Wilkinson-Katalysator



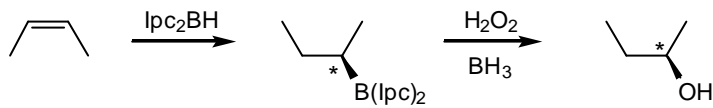
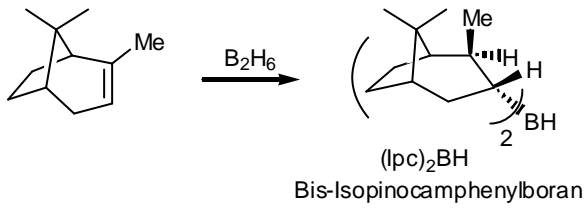
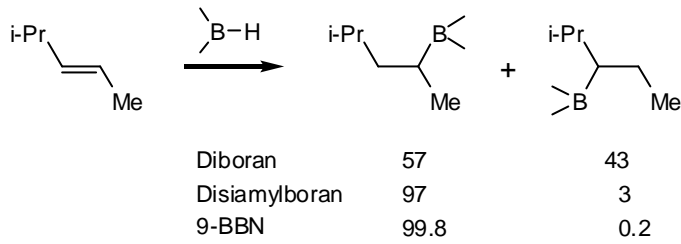
1.3. Reduktion mit Metalle, Metalhydride



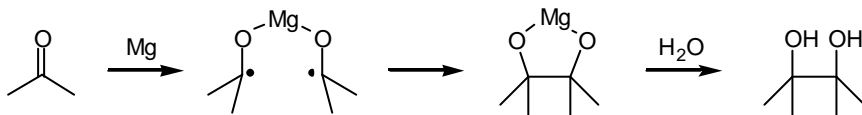
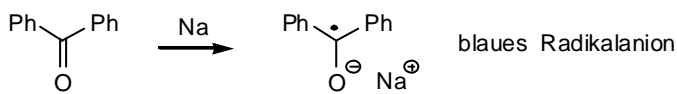
Diboran	94	:	6
Disiamylboran	99	:	1
9-BBN	99.9	:	0.1

5. Gruppe: Reduktions- und Oxidations-Reaktionen

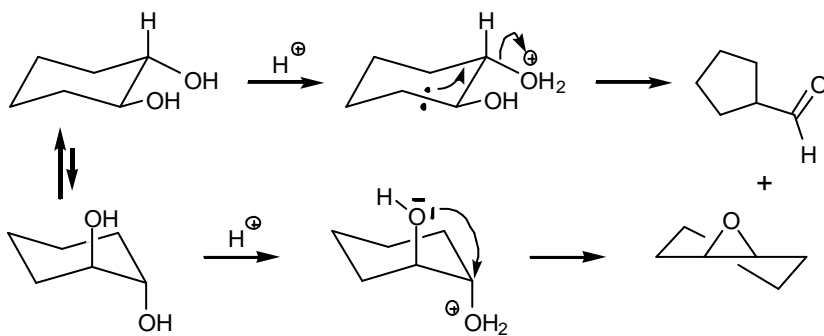
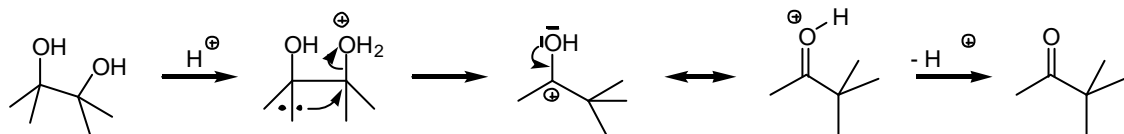
②



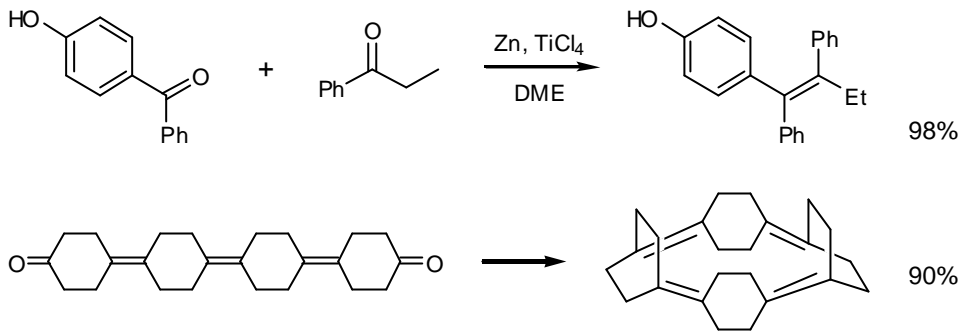
Reduktion mit Metallen



Pinakol-Umlagerung



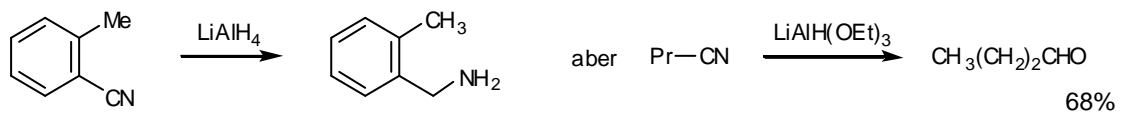
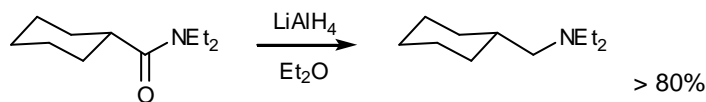
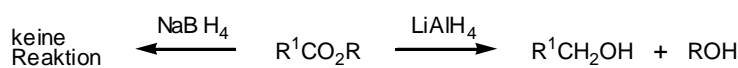
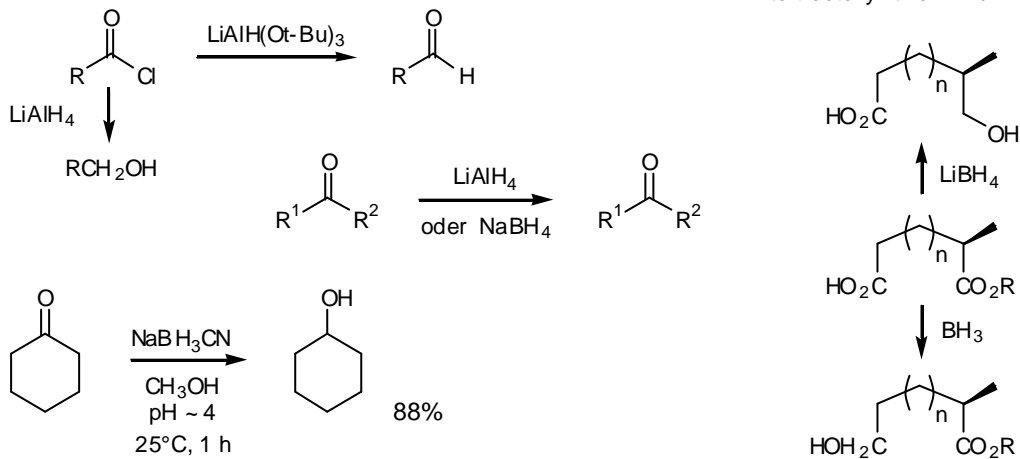
1.4. McMurry-Reaktion



Reduktion mit LiAlH_4 und andere komplexe Hydride

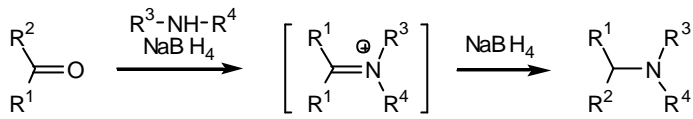
milderes, selektives Reduktionsmittel: $\text{LiAlH}(\text{O}t\text{-Bu})_3$

Tri-*tert*-butoxy-lithium-Aluminiumhydrid

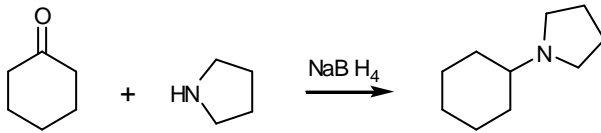
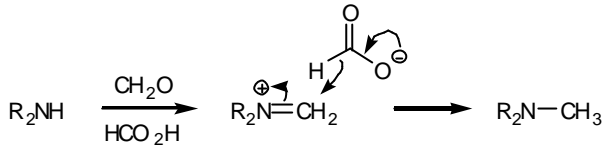


(Siehe Tabelle)

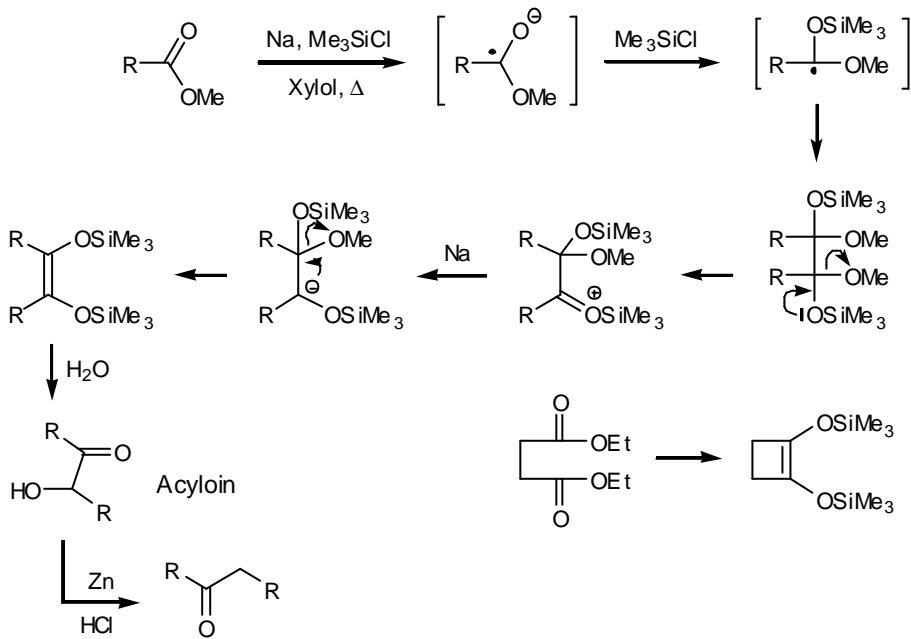
1.5. Reduktive Aminierung



Eschweiler-Clark N-Methylierung:



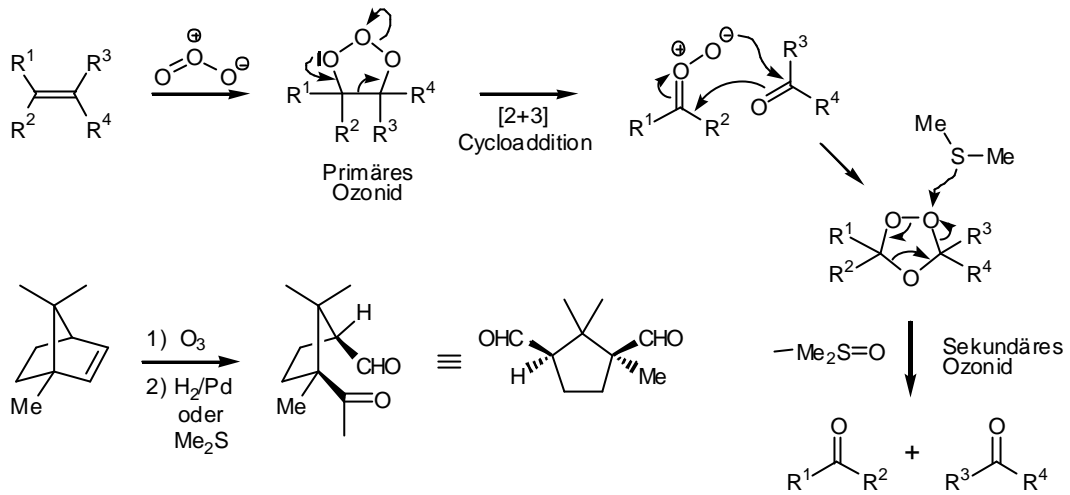
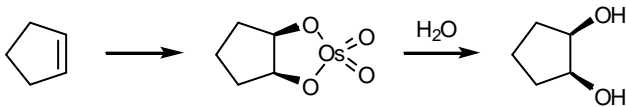
1.6. Acyloin-Kondensation



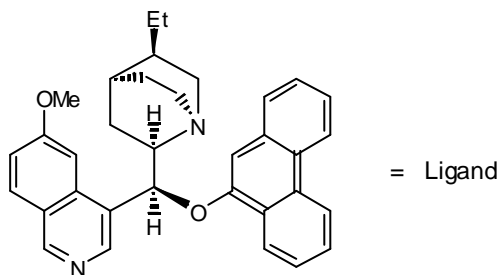
2) Oxidations-Reaktionen

2.1. Oxidation von Alkene

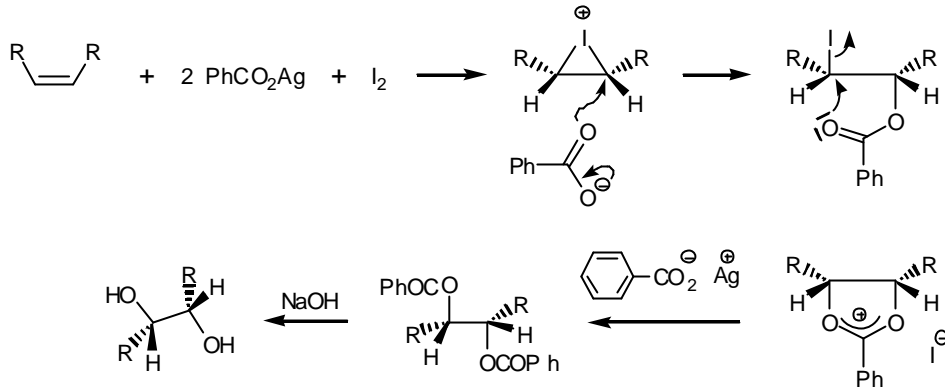
2.1.1. Ozonolyse

2.1.2. OsO_4 -Oxidation

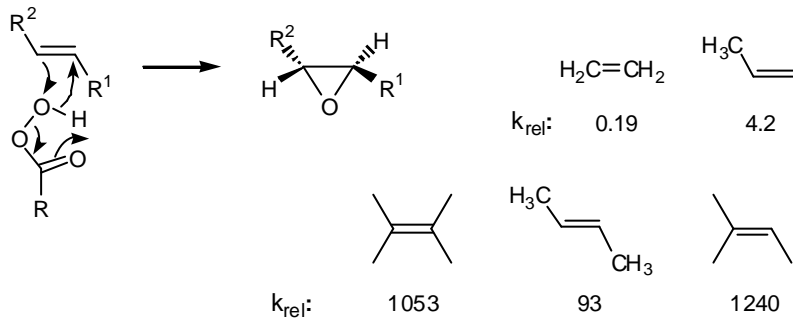
Asymmetrische Variante von Sharpless:



2.1.3. Proust-Reaktion: trans-Hydroxylierung



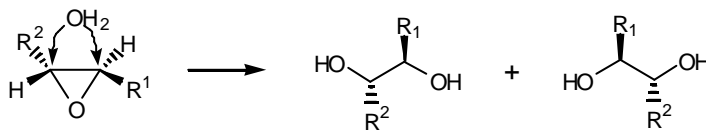
2.1.4. Epoxidation



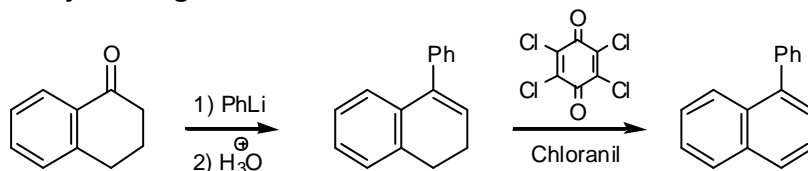
Epoxidierungsaktivität: $\text{CF}_3\text{CO}_3\text{H} > \text{HCO}_3\text{H} > \text{Cl}-\text{C}_6\text{H}_4-\text{CO}_3\text{H} > \text{CH}_3\text{CO}_3\text{H}$

MCP BA

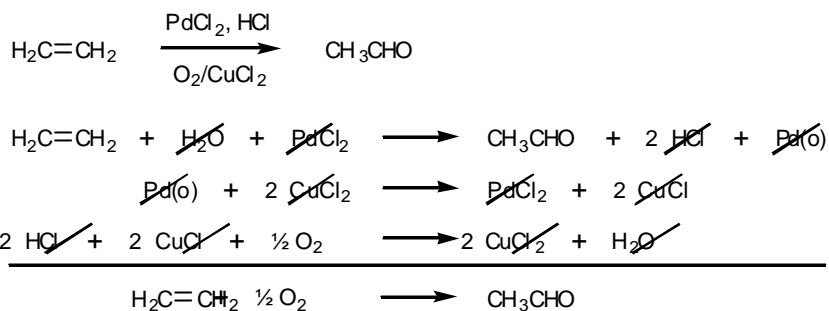
Ringöffnung



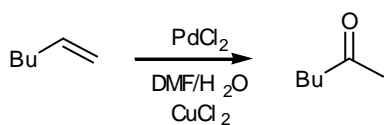
2.1.5. Dehydrierung mit Chiranen



2.1.6. Wacker-Oxidation

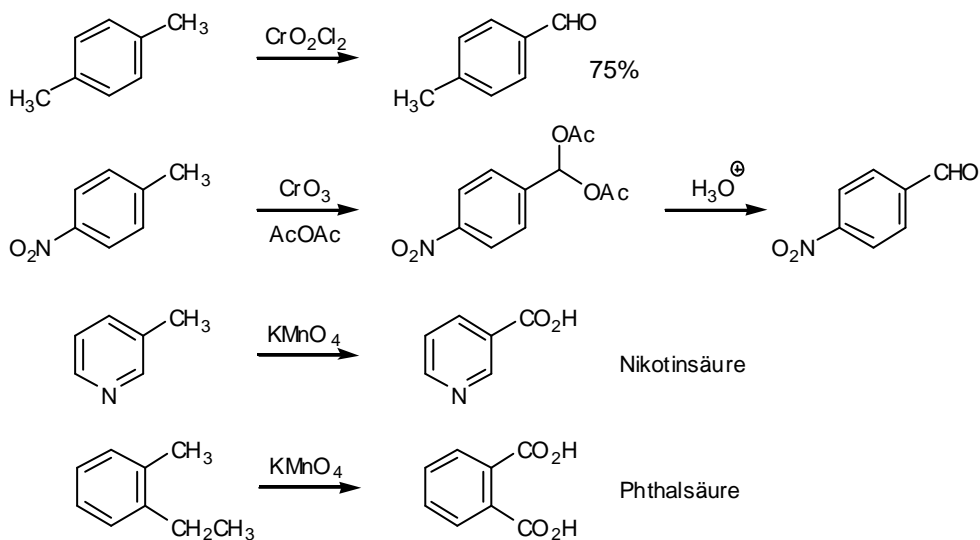


Synthese von Methylketonen

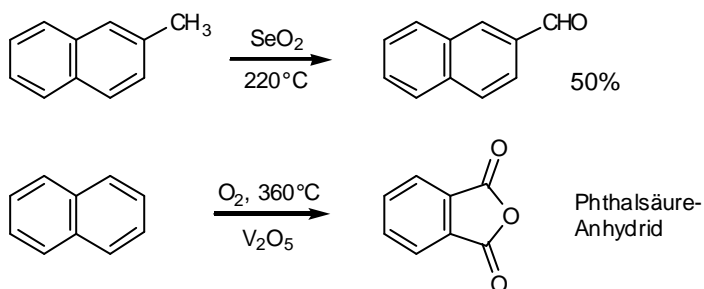


2.2. Oxidation von Aromaten

Erhard-Reaktion

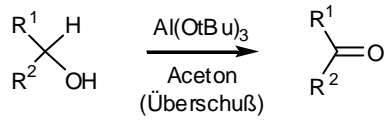


Selektivität mit SeO₂

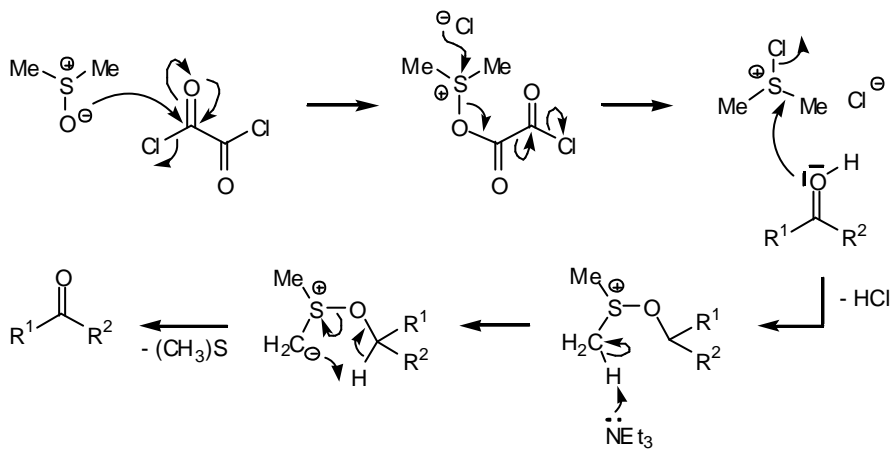
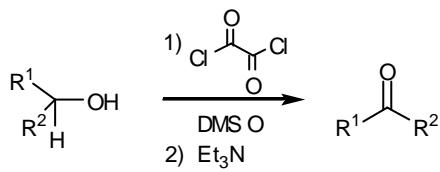


2.3. Oxidation von Alkohole

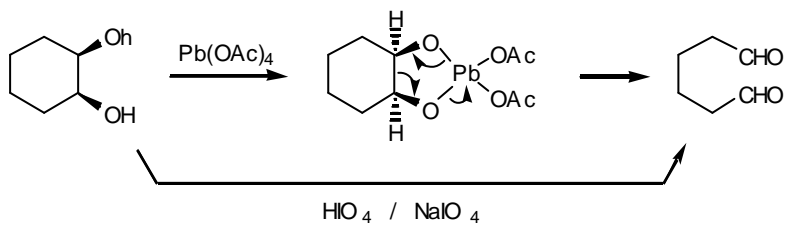
2.3.1. Oppenauer-Oxidation



2.3.2. Swern-Oxidation



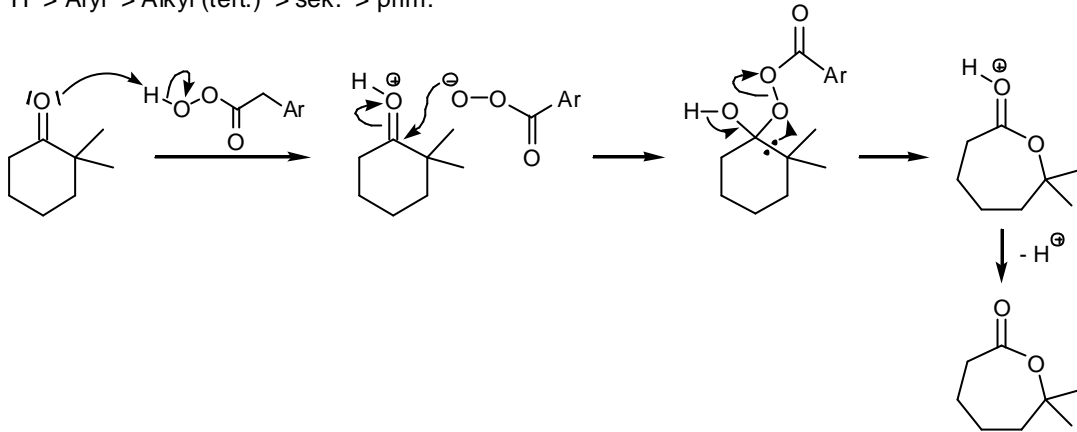
2.3.3. Glykolspaltung



2.4. Oxidation von Carbonyl-Verbindungen

2.4.1. Die Bayer-Villiger-Reaktion

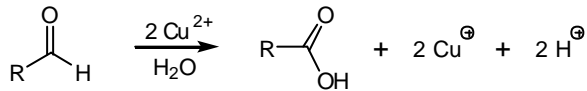
H > Aryl > Alkyl (tert.) > sek. > prim.



2.4.2. Verschiedene Oxidationsreaktionen

Aldehyde können unter sehr milden Bedingungen oxidiert werden.

Fehling-Test



Tollens-Reagenz

