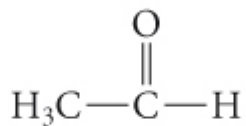


ALDEIDI E CHETONI

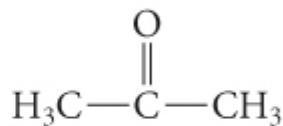


aldeide

chetone



acetaldeide
(un'aldeide)



acetone
(un chetone)

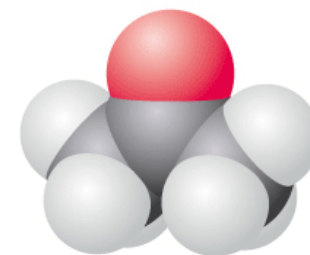
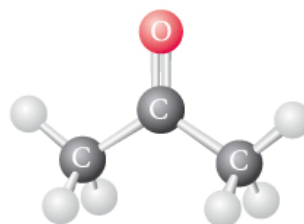
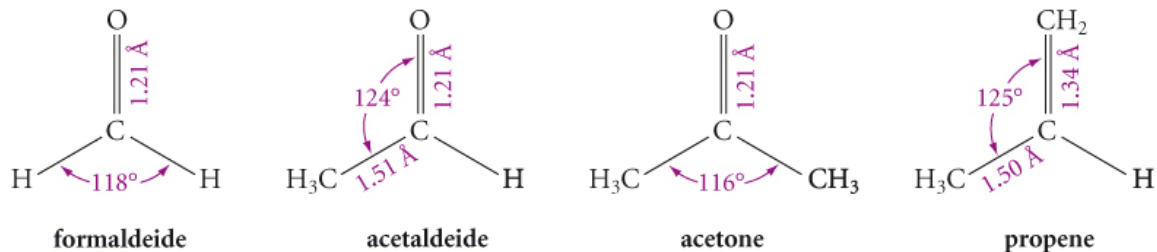
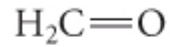
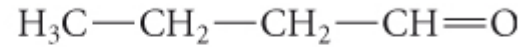


Figura 19.2 Strutture di aldeidi e chetoni. (a) Le strutture di formaldeide, acetaldeide e acetone sono messe a confronto con quelle del propene. I legami $\text{C}=\text{O}$ sono più corti del legame $\text{C}=\text{C}$ e il carbonio carbonilico ha una geometria trigonale planare con angoli di legame molto vicini a 120° . (b) Un modello sfere e bastoncini dell'acetone. (c) Un modello space filling dell'acetone.

NOMENCLATURA



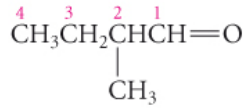
formaldeide



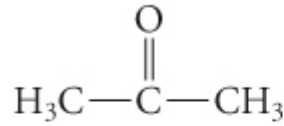
butirr + *aldeide* = **butirraldeide**



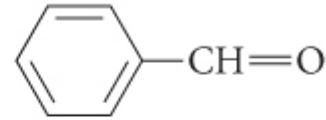
butan + *ale* = **butanale**



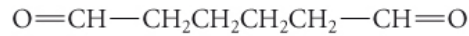
2-metilbutanale



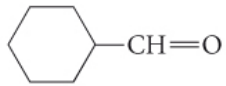
acetone



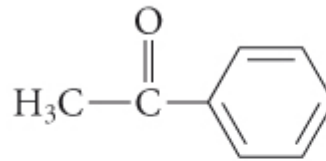
benzaldeide



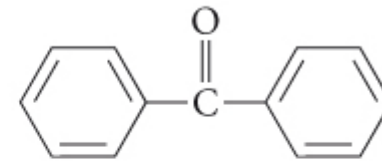
esandiale



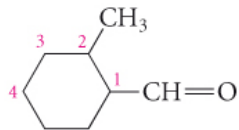
cicloesancarbaldeide



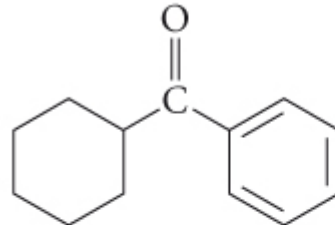
acet + *ofenone* = **acetofenone**



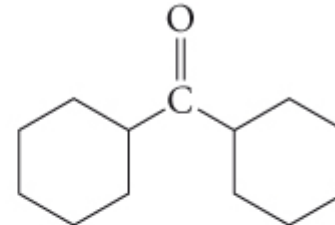
benzofenone



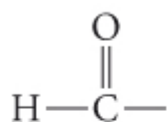
2-metilcicloesancarbaldeide



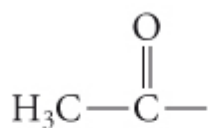
cicloesil fenil chetone



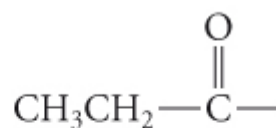
dicloesil chetone



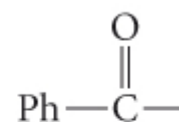
gruppo formile



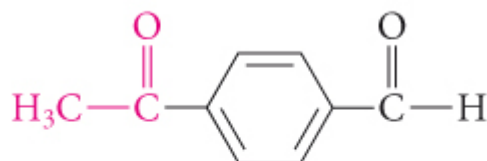
gruppo acetile



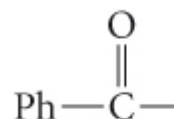
gruppo propionile



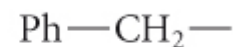
gruppo benzoile



p-acetilbenzaldeide



gruppo benzoile



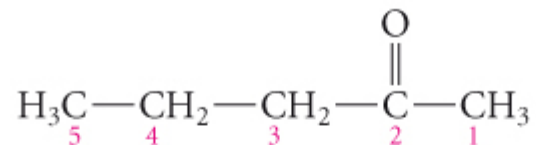
gruppo benzile



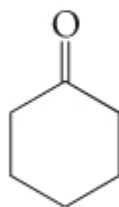
Loudon
Chimica Organica
EdiSES



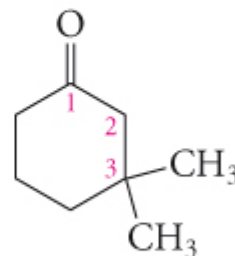
Loudon
Chimica Organica
EdiSES



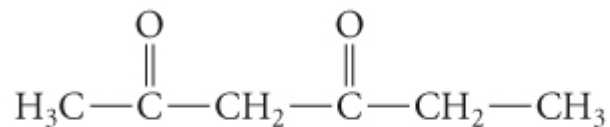
catena a cinque atomi di carbonio: pentanone + *one* = **pentanone**
 posizione del carbonile: **2-pentanone**



cicloesano + *one* = **cicloesano**



3,3-dimetilcicloesano



catena a sei atomi di carbonio: esan + *dione* = **esandione**
 posizione dei carbonili: **2,4-esandione**

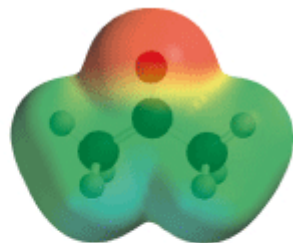


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Chimica Organica
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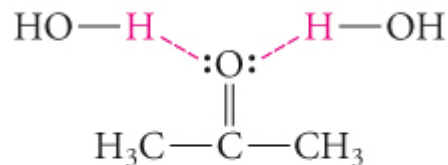
PROPRIETA' FISICHE



dipolo di legame
del legame C=O



MPE dell'acetone



	$\text{CH}_3\text{CH}=\text{CH}_2$	$\text{CH}_3\text{CH}=\text{O}$	$\text{CH}_3\text{CH}_2\text{OH}$
punto di ebollizione	$-47.4\text{ }^\circ\text{C}$	$20.8\text{ }^\circ\text{C}$	$78.3\text{ }^\circ\text{C}$
momento di dipolo	0.4 D	2.7 D	1.7 D

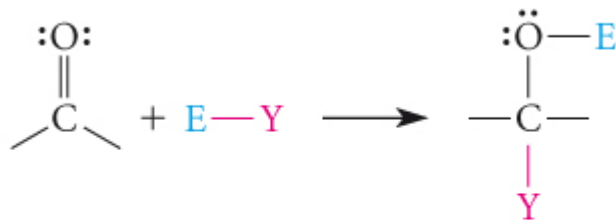
punto di ebollizione	$-6.9\text{ }^\circ\text{C}$	$56.5\text{ }^\circ\text{C}$	$82.3\text{ }^\circ\text{C}$
momento di dipolo	0.5 D	2.7 D	1.7 D

REATTIVITA'

con ACIDI



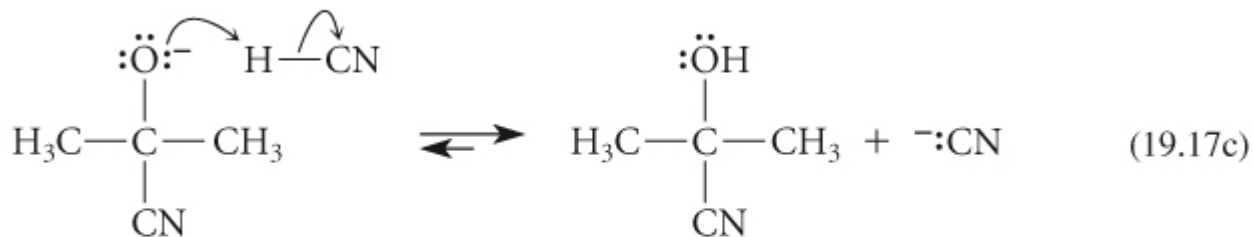
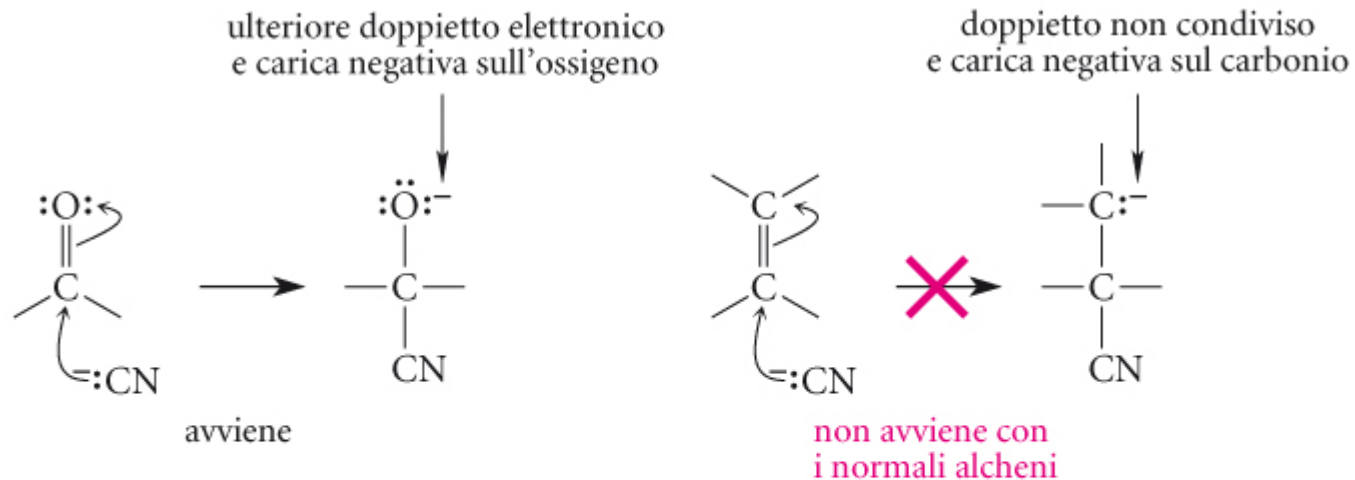
reazione di ADDIZIONE

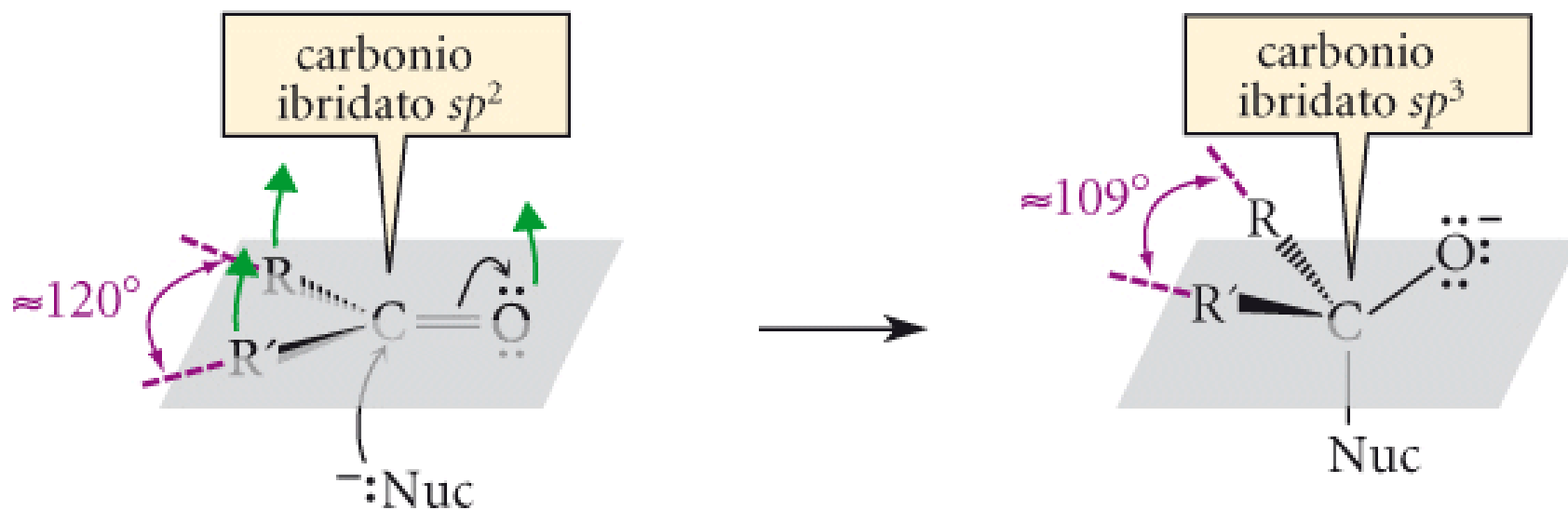
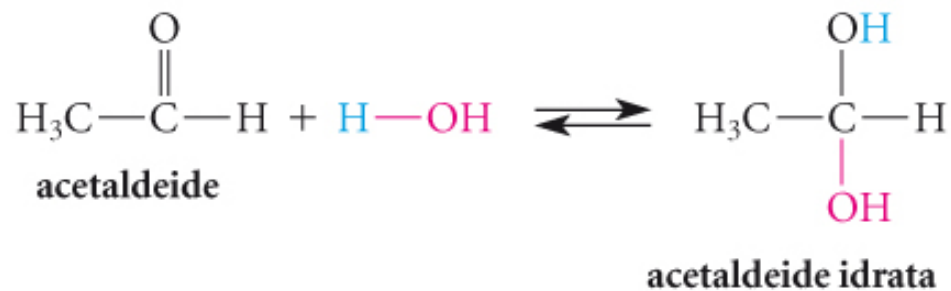


reazione di OSSIDAZIONE delle aldeidi

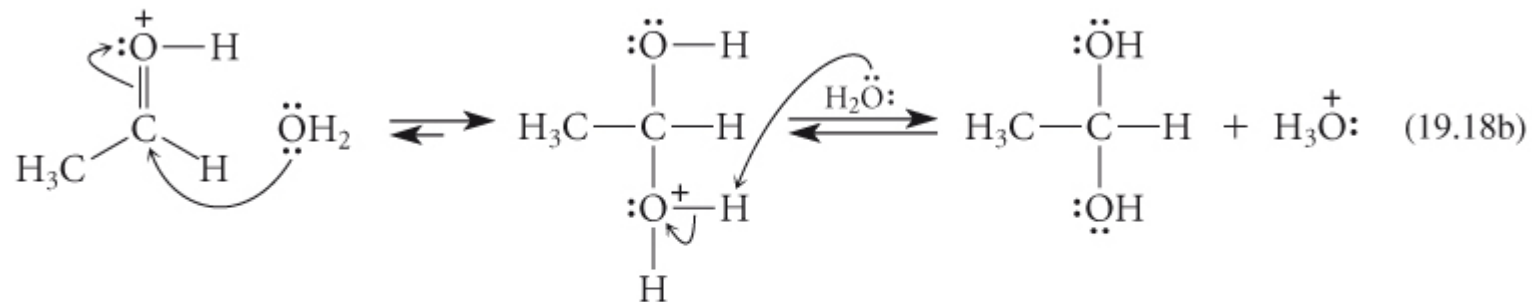


reazione di ADDIZIONE





reazione di ADDIZIONE in condizioni acide



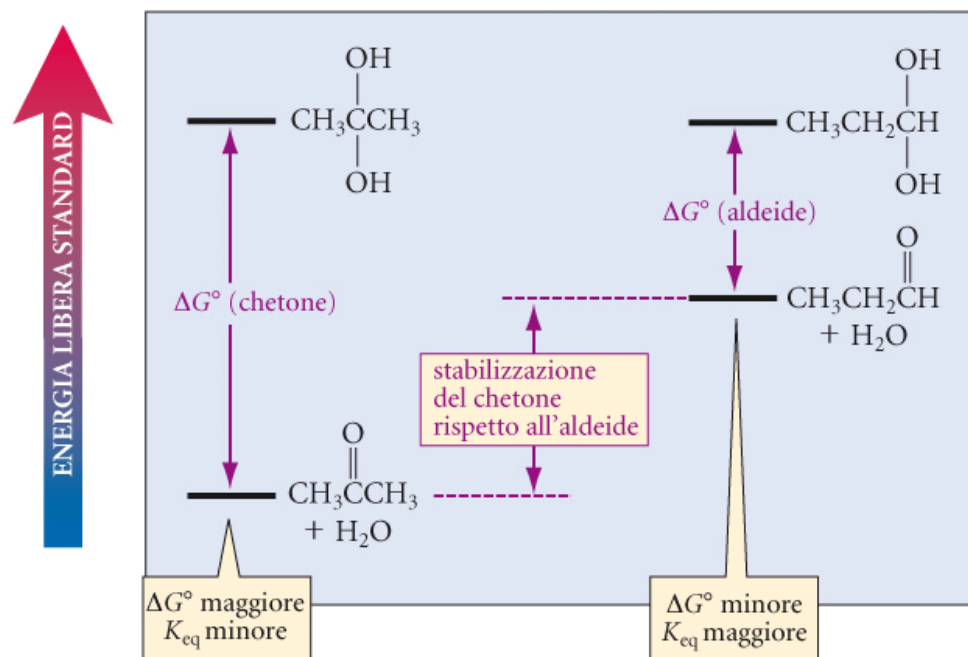
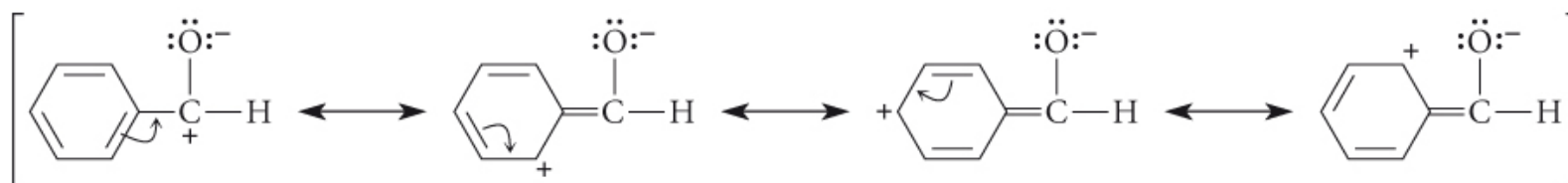
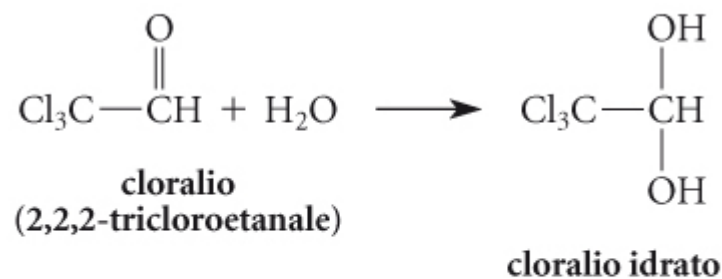
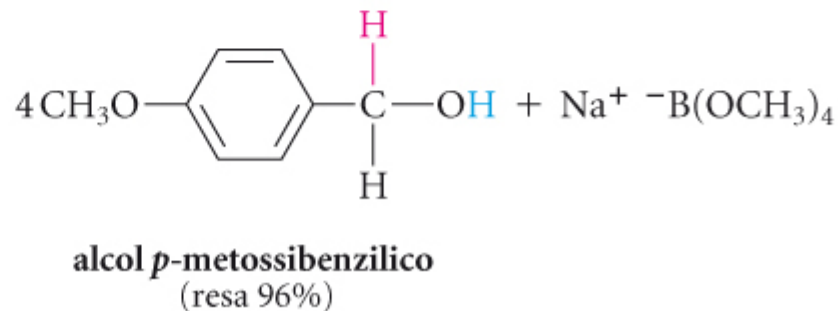
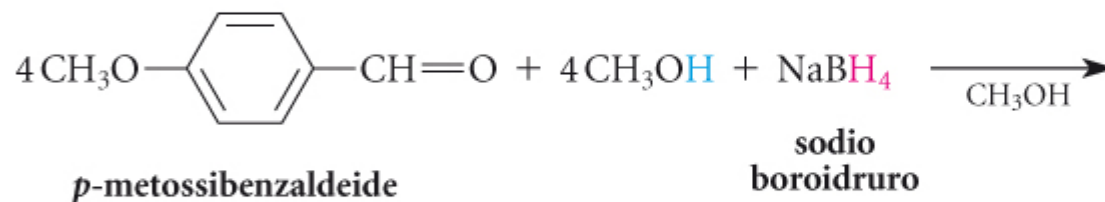
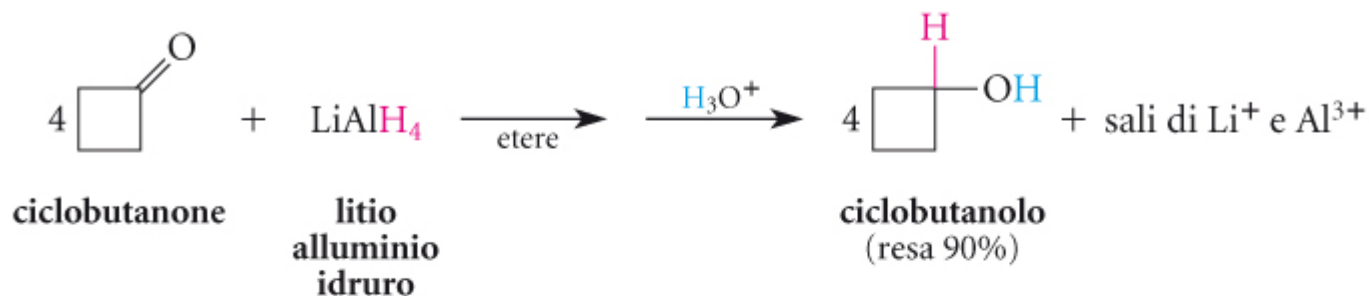


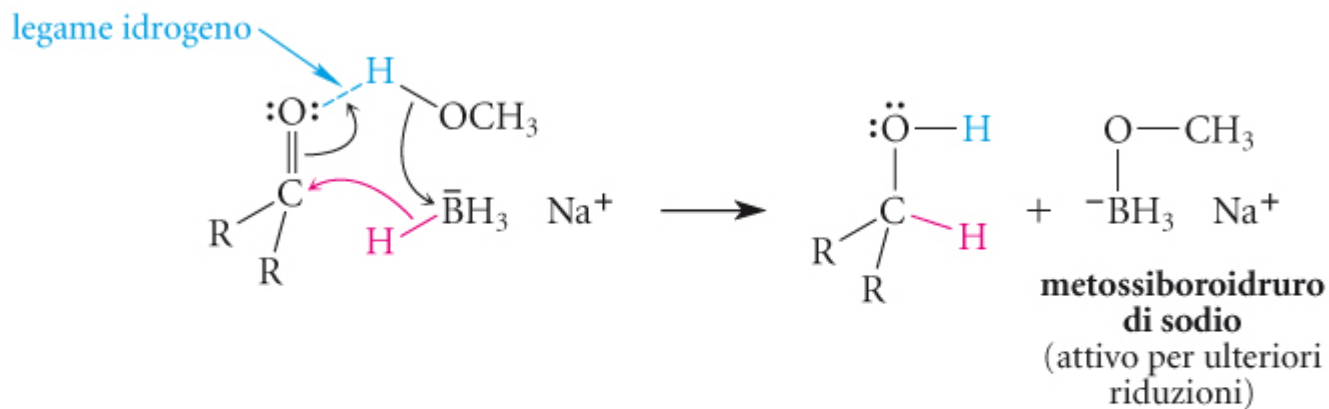
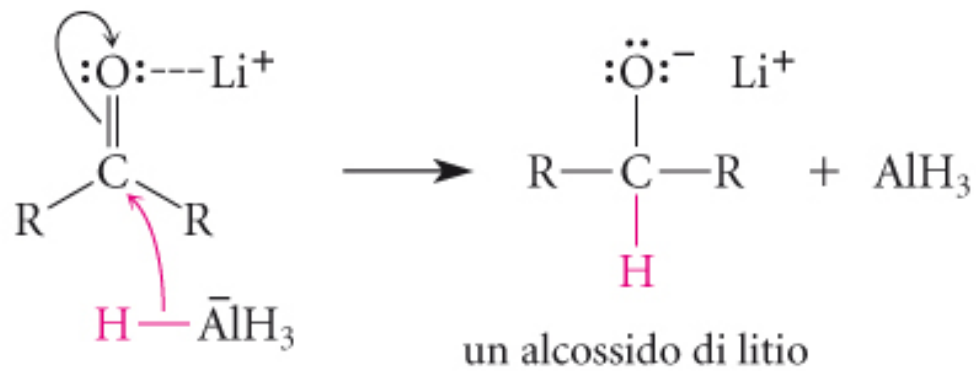
Figura 19.9 La maggiore stabilità di un chetone rispetto a un'aldeide fa in modo che, nel caso di un chetone, l'energia libera standard di idratazione sia anch'essa maggiore e che, di conseguenza, la costante di equilibrio sia minore. (Le due forme idrate sono state messe allo stesso livello di energia per favorire il confronto.)



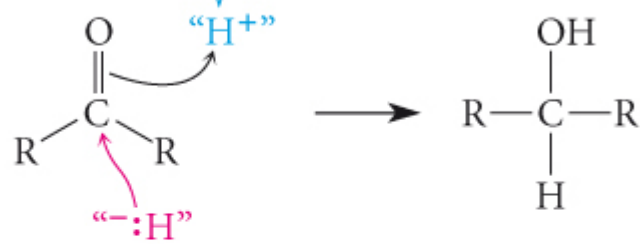
Benzaldeide (aldeidi aromatiche) e chetoni hanno Keq. basse per la reazione di idratazione ed il cloralio???

reazione di RIDUZIONE

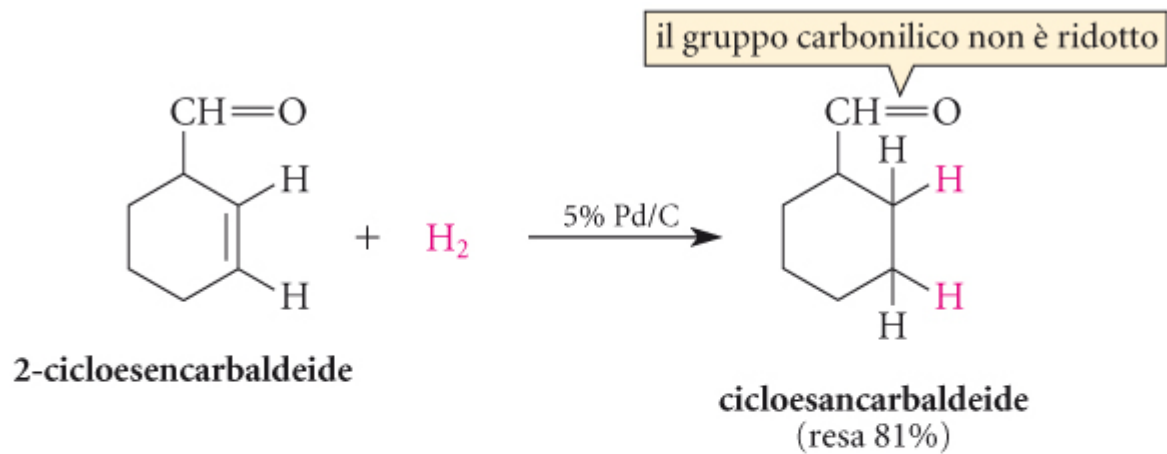
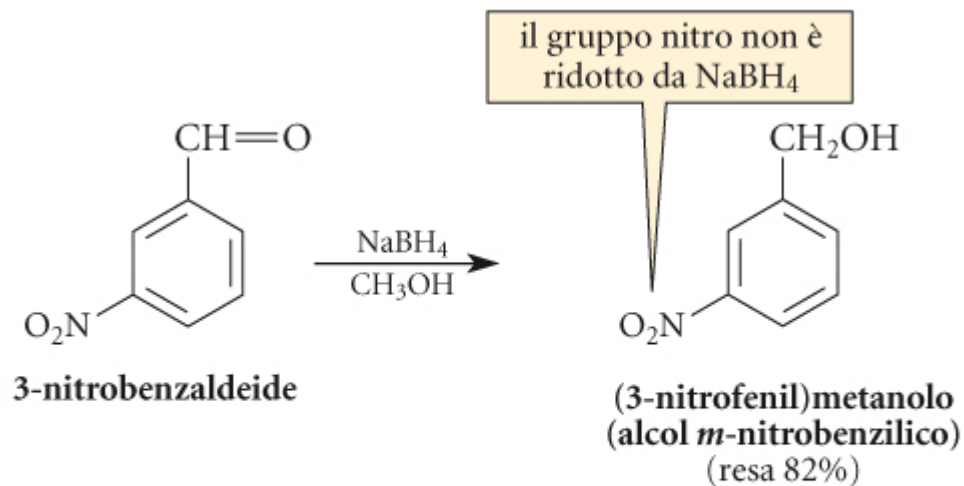




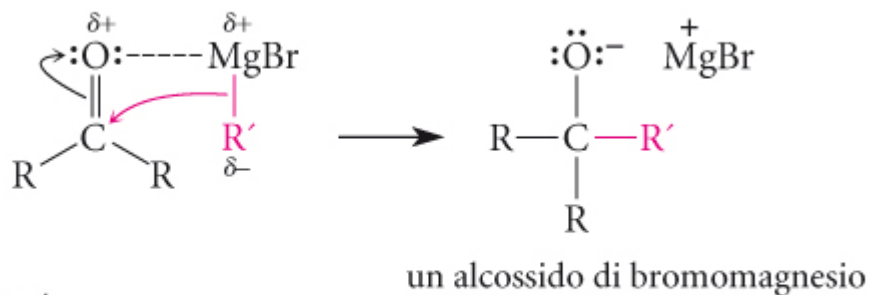
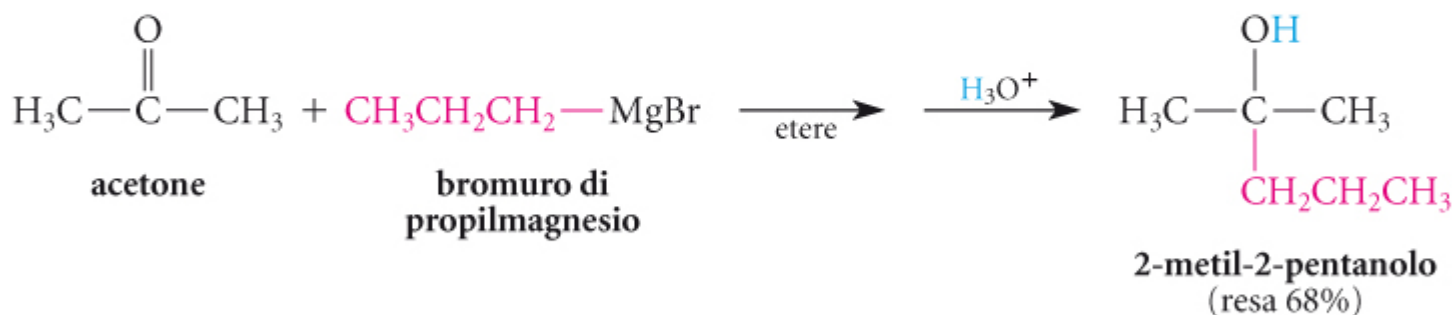
deriva dall'acido o dal solvente

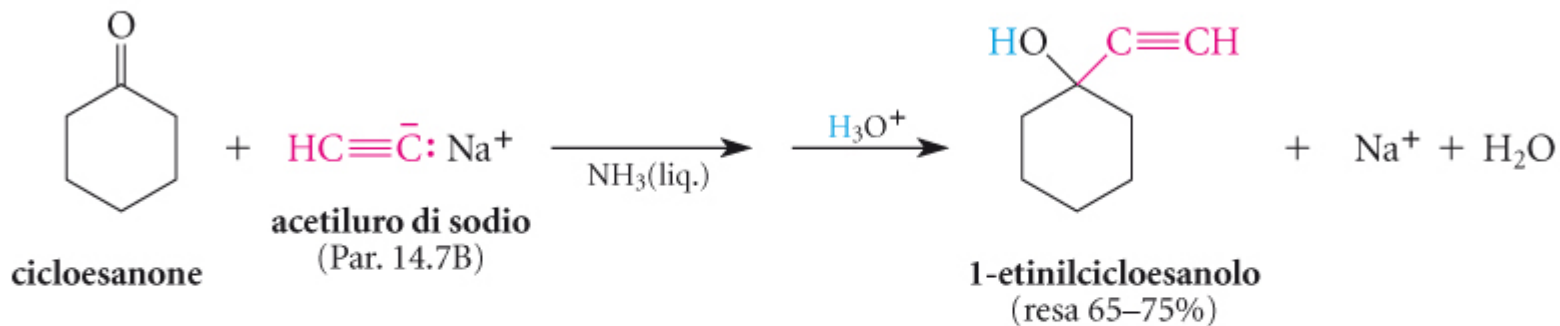
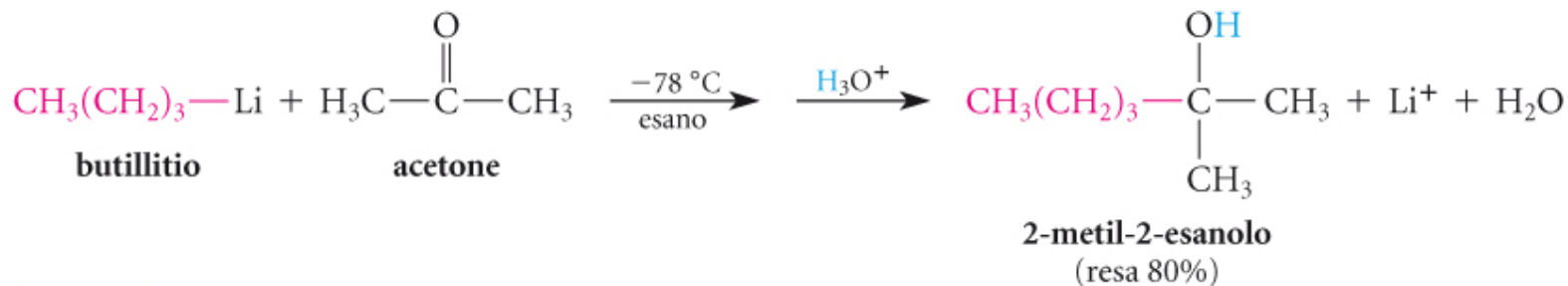
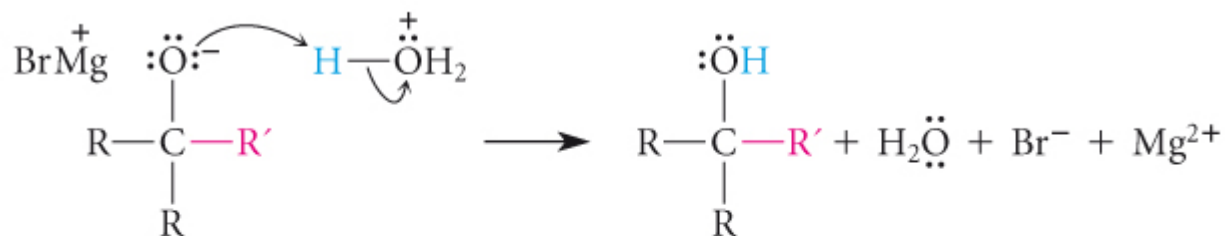


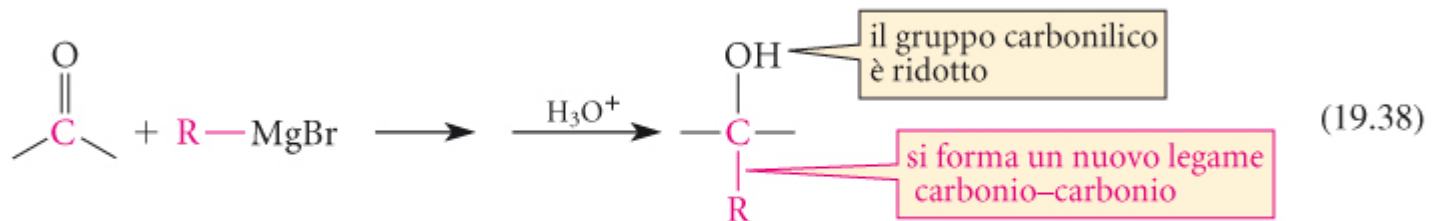
deriva da AlH_4^- o BH_4^-



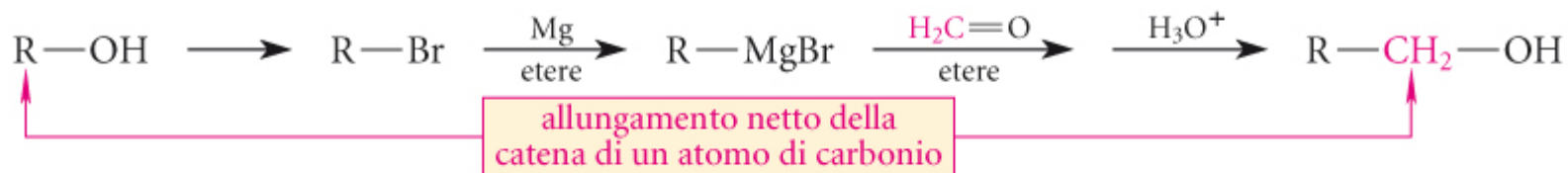
reazione con i REATTIVI di GRIGNARD





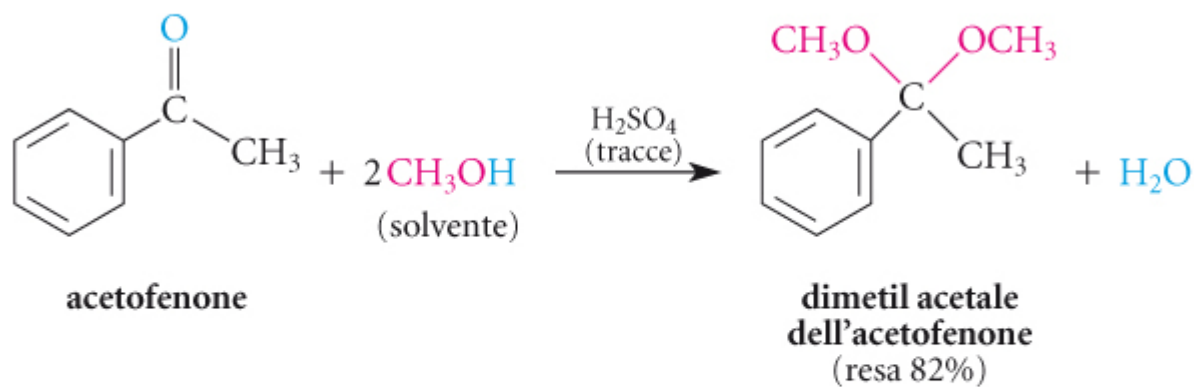
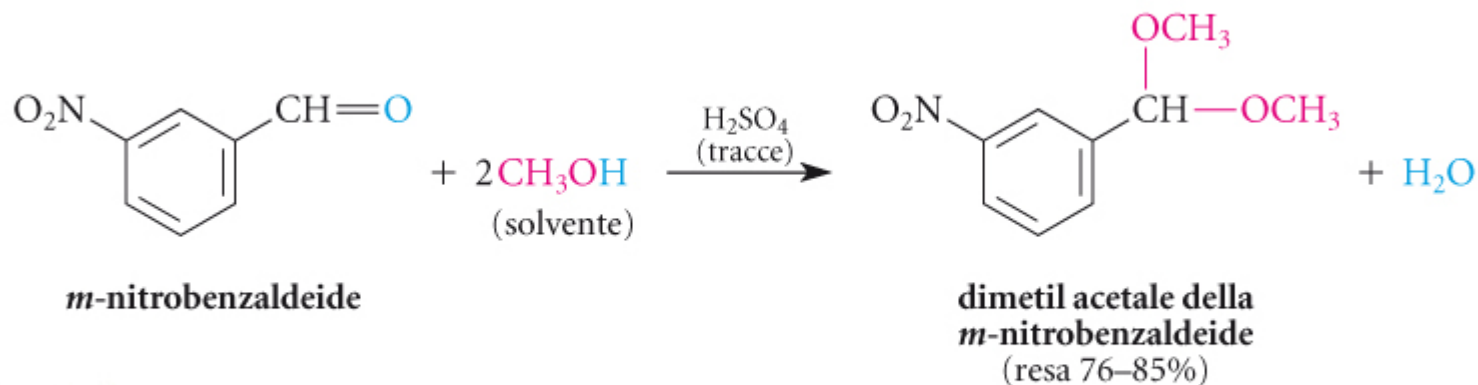


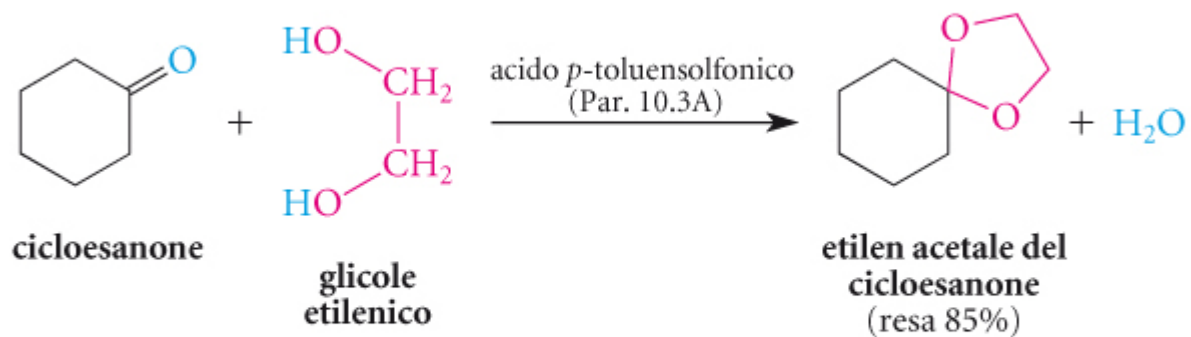
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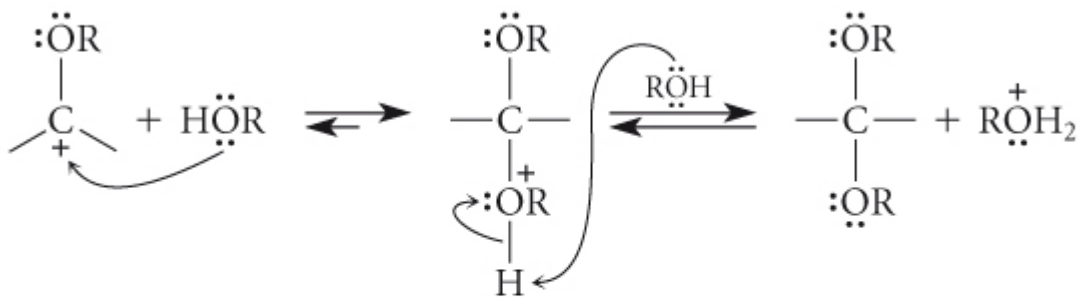
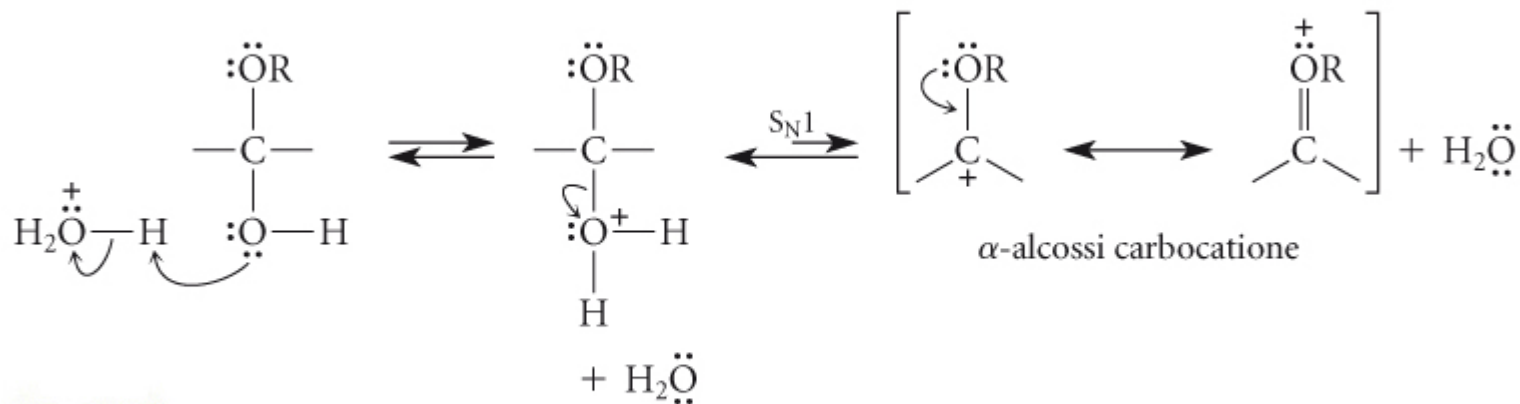
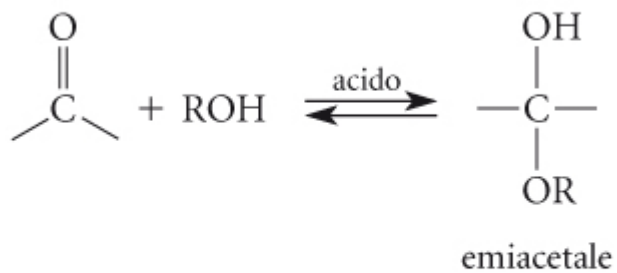
Loudon
Chimica Organica
EdISES

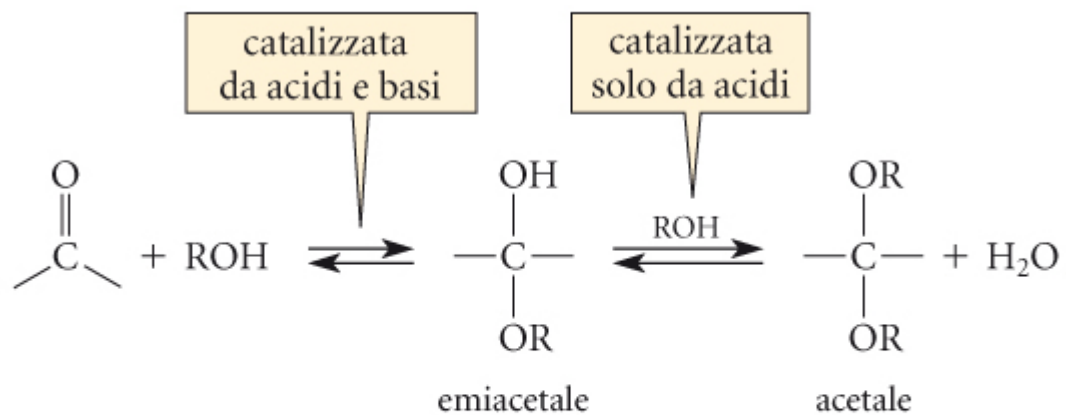
ACETALI e meccanismo di FORMAZIONE



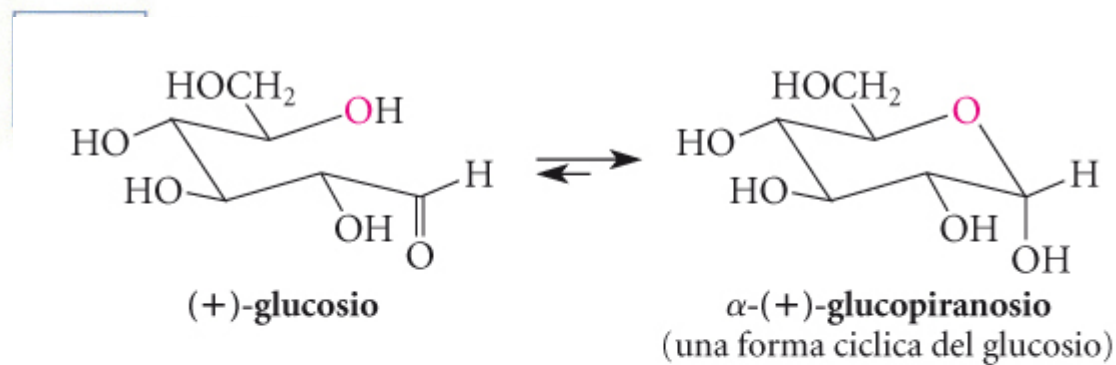
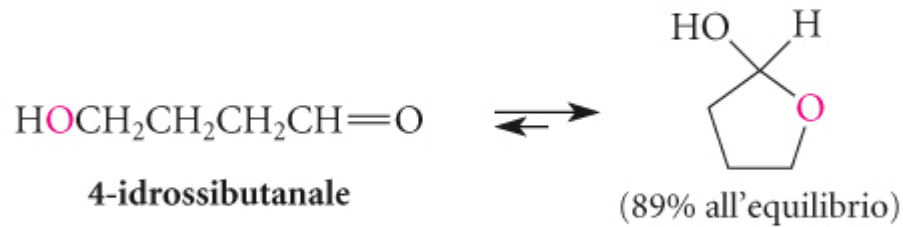
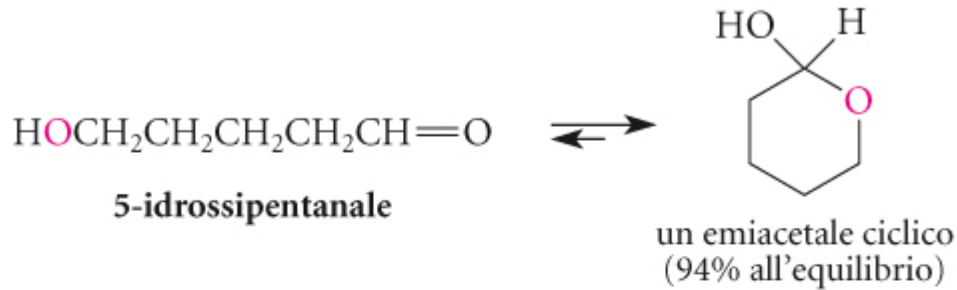


Loudon
Chimica Organica
EdiSES

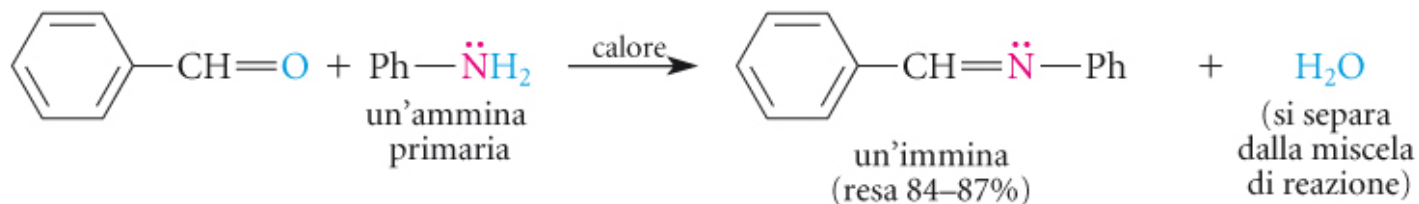
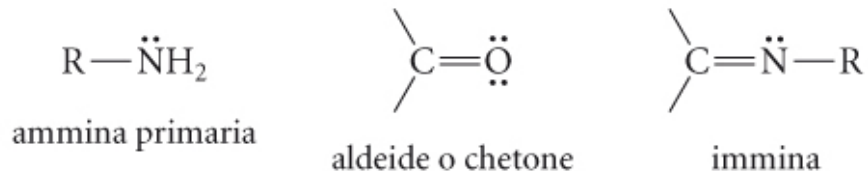




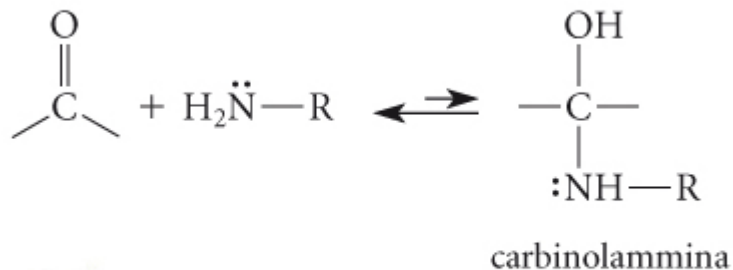
EMIACETALI CICLICI



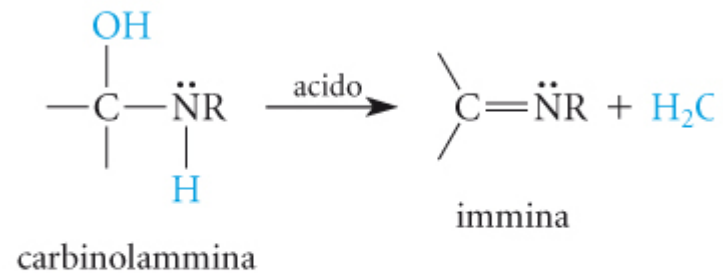
REAZIONI con AMMINE



MECCANISMO : a) ADDIZIONE AL CARBONILE

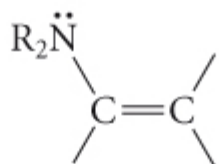
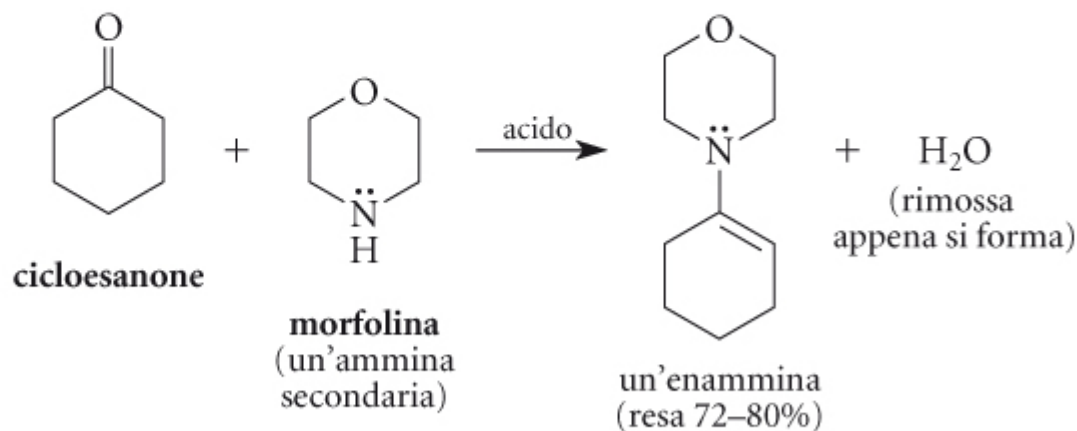
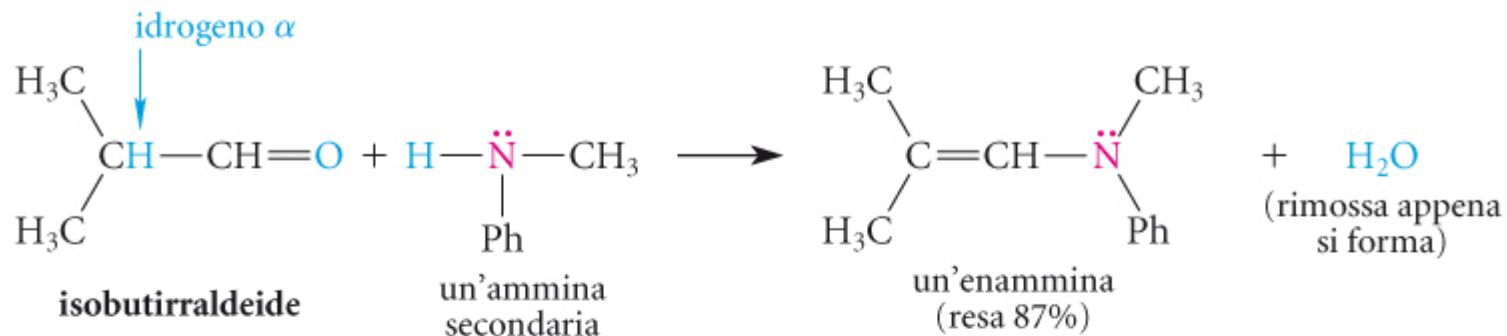


b) β -ELIMINAZIONE

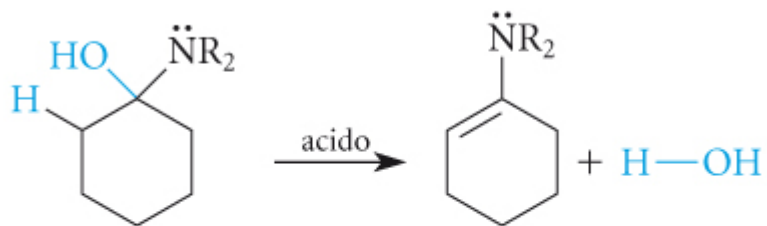
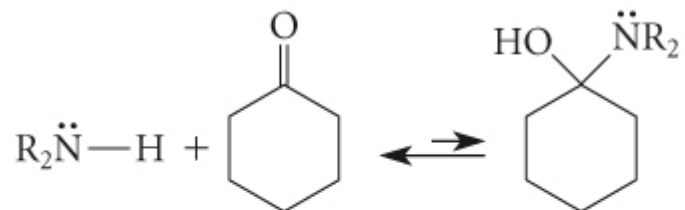


Loudon
Chimica Organica
EdISES

con AMMINE SECONDARIE

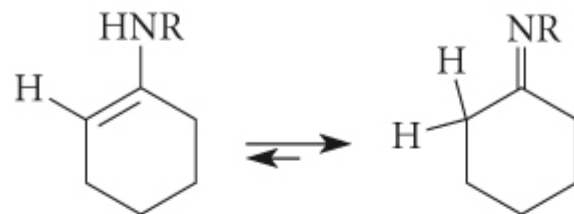


struttura generale delle enammine



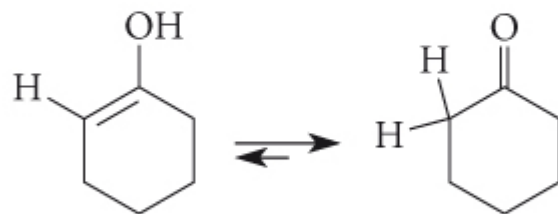
Loudon
Chimica Organica
EdISES

La β -ELIMINAZIONE **NON** può avvenire sull'azoto amminico. Perché???



un'enammina

l'immina isomerica
(più stabile)



un enolo

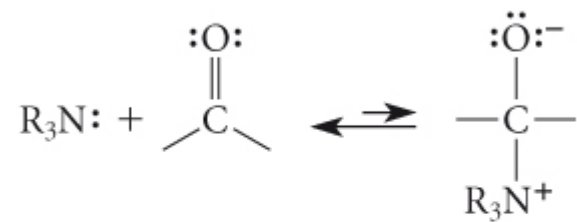
il chetone isomerico
(più stabile)



Perché???



con AMMINE TERZIARIE



OSSIDAZIONE

