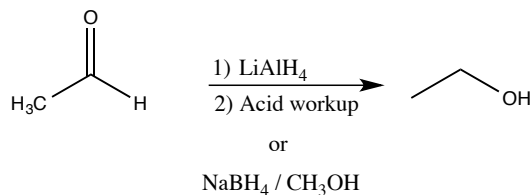


Chem 345 – Organic Reactions Chapter 19
Prepared by José Laboy, MS
<http://www.chem.wisc.edu/areas/clc> (Resource page)

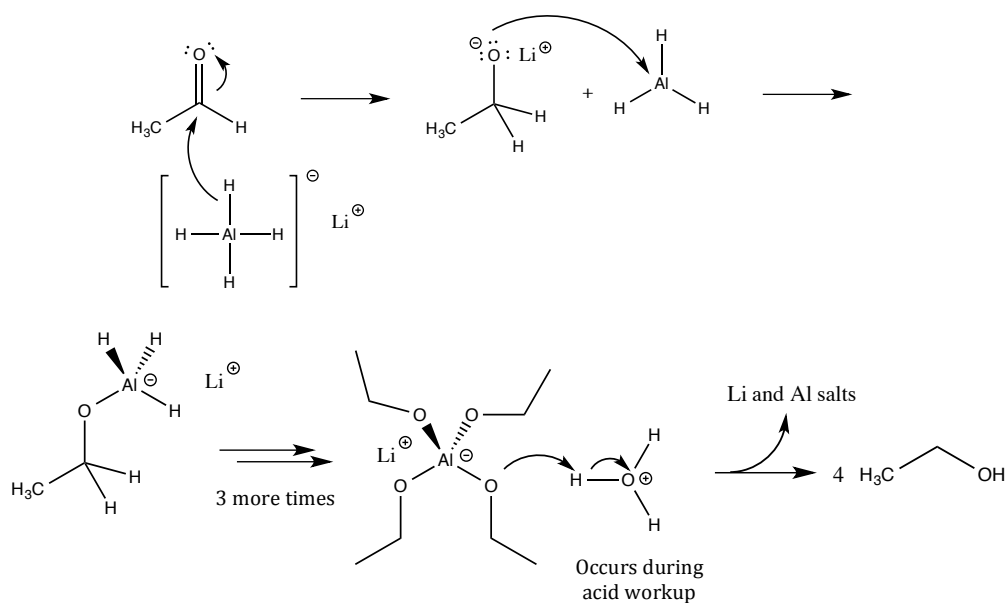
Aldehyde and Ketone Reduction

Reaction:

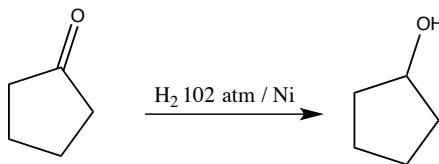


Aldehydes are reduced to 1° alcohols
Ketones are reduced to 2° alcohols

Mechanism:



The reduction of an aldehyde or ketone is like another addition reaction to carbonyls. Either reagent, LiAlH_4 or NaBH_4 will do the job. Use of H_2 under high pressure in the presence of a precious metal can also provide a reduction.



Because of the harsh conditions necessary to reduce the carbonyl groups using catalytic hydrogenation milder conditions will selectively hydrogenate alkene compounds, e.g., $\text{H}_2 / \text{Pd}(\text{C})$.

