

# The Oxidation Ladder

"Master Organic Chemistry"  
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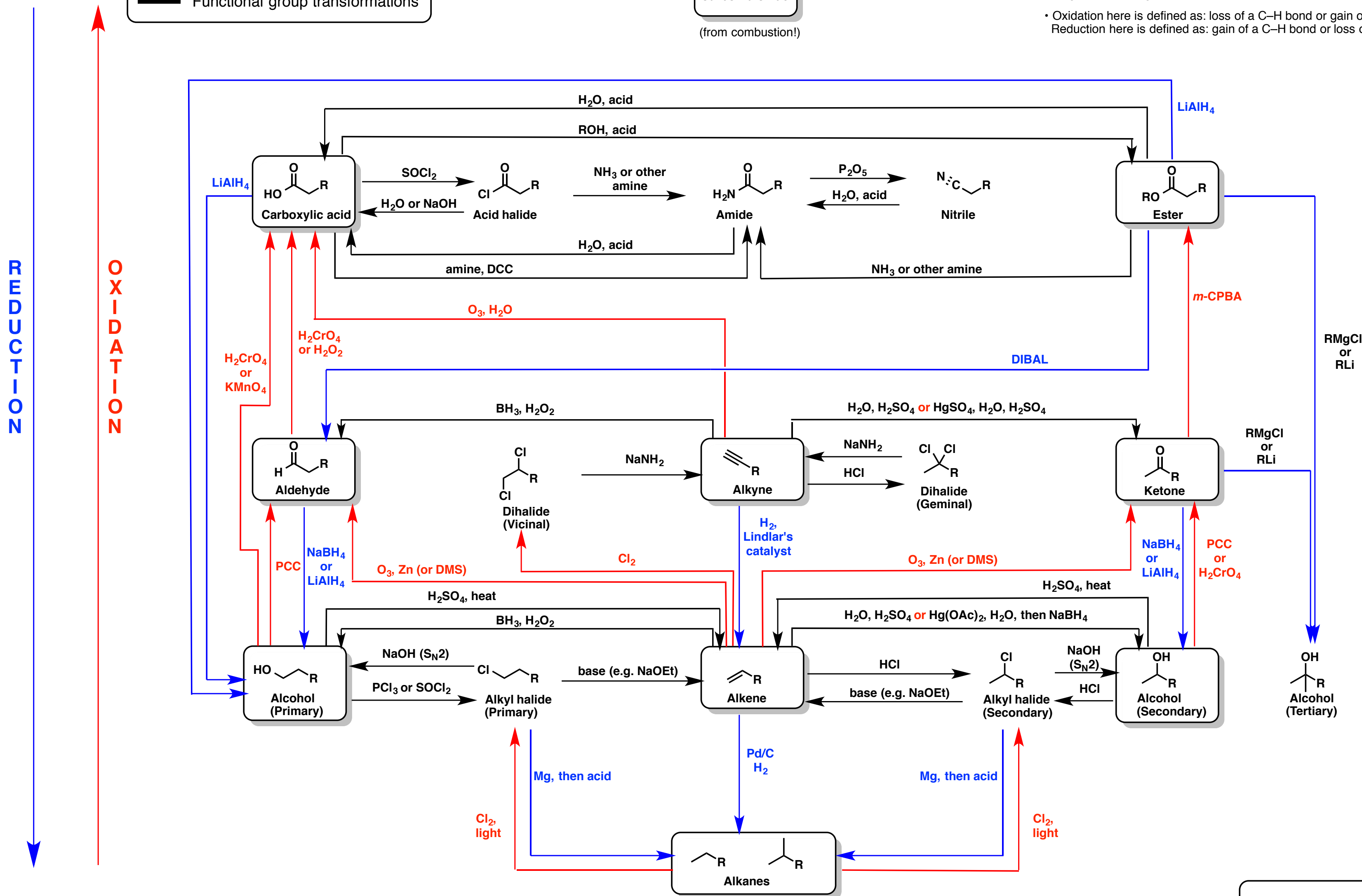
Note - this sheet is not meant to be comprehensive. Your course may provide additional material, or may not cover some of the reactions shown here. Your course instructor is the final authority.

Oxidation state of carbon

- Indicates oxidations
- Indicates reductions
- Functional group transformations

**CO<sub>2</sub>**  
 Carbon dioxide  
 (from combustion!)

- To keep things relatively simple, several common functional groups (amines, epoxides, ethers, and many more) have been omitted.
- All alkyl halides are drawn as chlorides ("Cl"). For Br and I, the corresponding reagent containing those atoms should be employed.
- Oxidation here is defined as: loss of a C-H bond or gain of a C-O bond (or equivalent)  
 Reduction here is defined as: gain of a C-H bond or loss of a C-O bond (or equivalent)



Omissions, Mistakes, Suggestions?

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