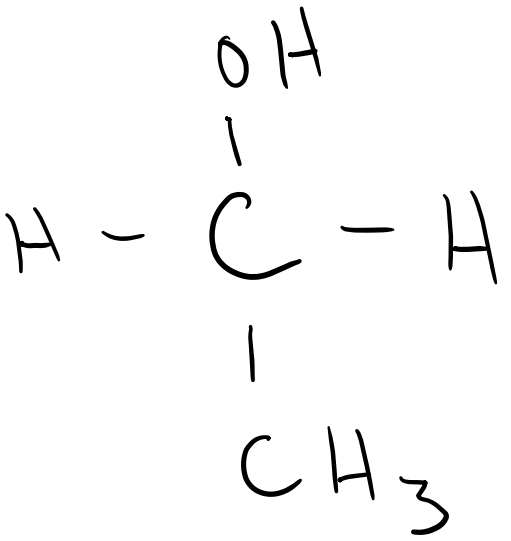
Oxidation State & Oxidation of Alcohols

2/1/2023

Calculating Oxidation States (12.4)

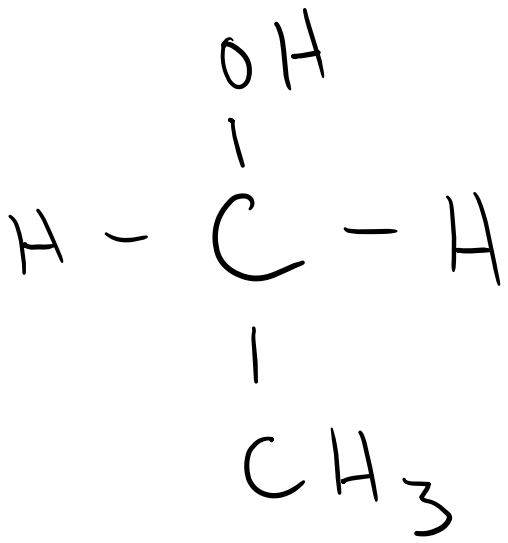
Formal charge:

Oxidation state:



Calculating Oxidation States

(12.4)



1) Bonds to atoms w/ same EN can be ignored.

2) +1 for each <u>bond</u> to more EN atom

3) -1 for each bond to less EN atom

4) add formal charge of atom (if it has one)

Oxidation and Reduction (of Hydrocarbons)

Oxidation is the _____ of electrons.

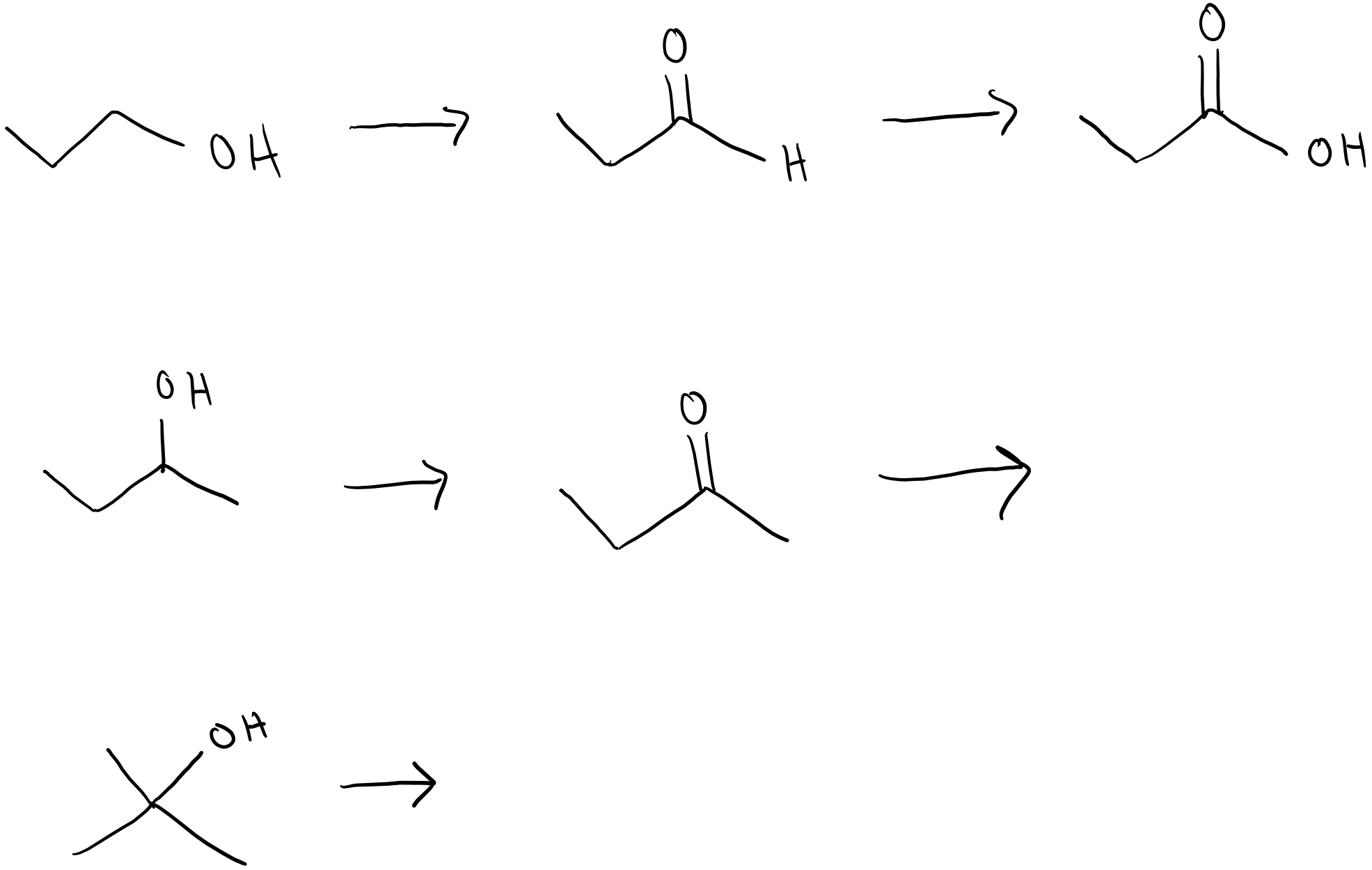
Oxidizing an atom _____ its oxidation state.

Reduction is the _____ of electrons.

Reducing an atom _____ its oxidation state.

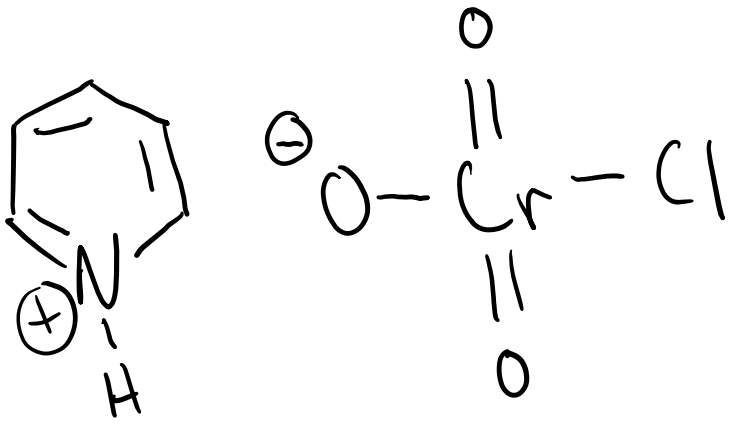
Oxidation States and Functional Groups

(12.10)

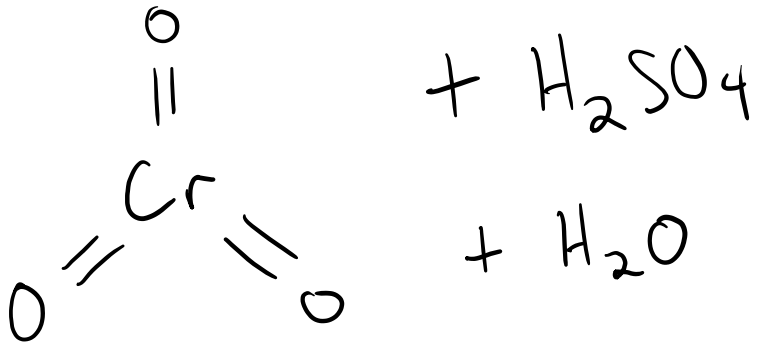


Chromium-based Reagents for Oxidizing Alcohols

(12.10)



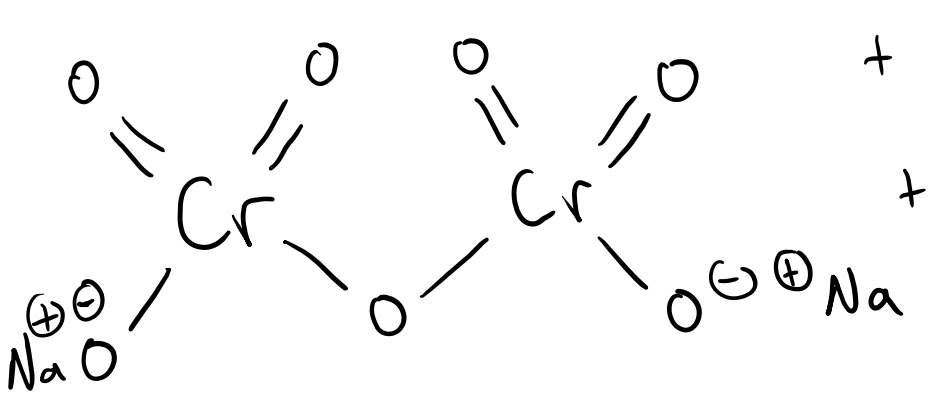
Chromium-based Reagents for Oxidizing Alcohols (12.10)



+ H_2SO_4

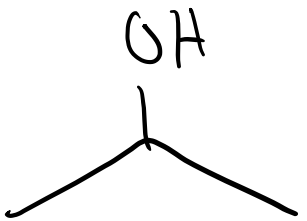
+ H_2O

or



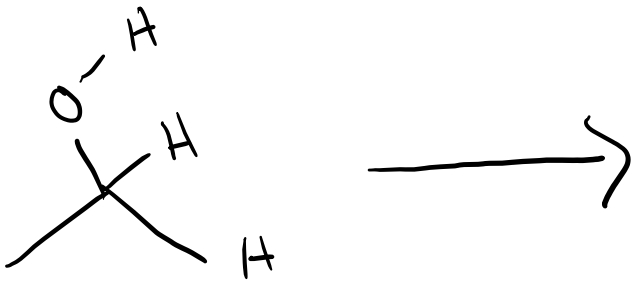
+ H_2SO_4

+ H_2O



Oxidizing Alcohols with Chromium: Mechanism

General:



PCC:

Oxidizing Alcohols with Chromium: Mechanism

Aqueous Cr^{6+}: