

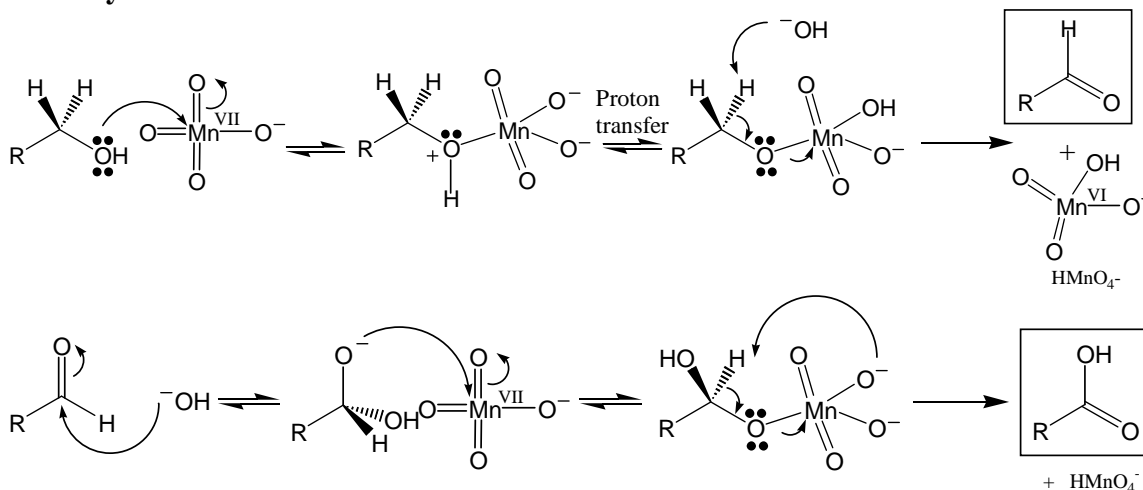
Chem 52 (W03): Demonstration of Alcohol Oxidation

Three different types of alcohols (1°, 2°, 3°) are oxidized with basic potassium permanganate ($\text{MnO}_4^-/\text{HO}^-$). The amount of MnO_2 formed gives a colorimetric indication of the extent to which each alcohol is oxidized.

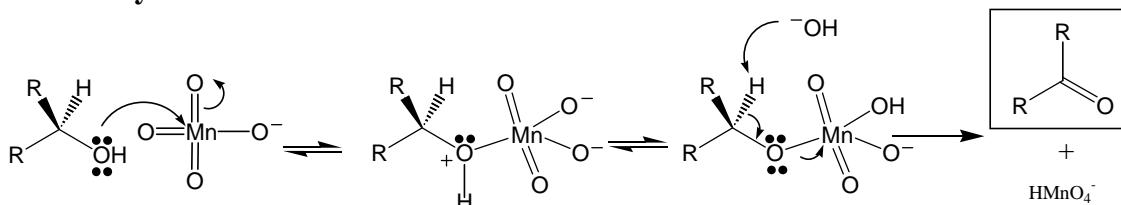
Compare the mechanisms and results from this permanganate oxidation with the chromium oxide and PCC oxidation chemistry described in McMurry (section 17.8).

What other types of oxidation occur with permanganate?

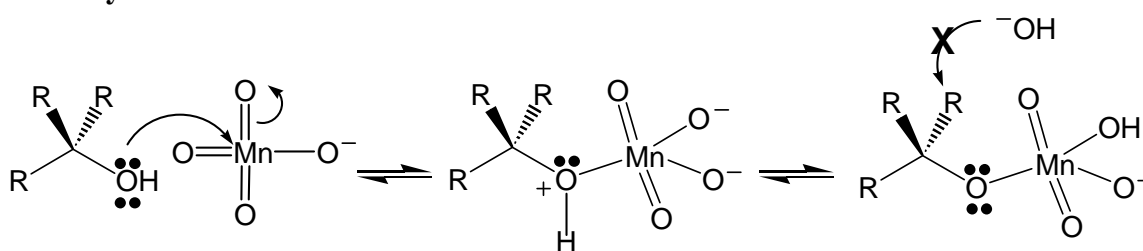
Primary Alcohols



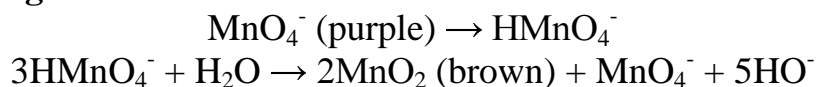
Secondary Alcohols



Tertiary Alcohols



Color Change:



[and remember combustion: $\text{CH}_3\text{CH}_2\text{OH} + 3\text{O}_2 \rightarrow 2\text{CO}_2 + 3\text{H}_2\text{O}$]