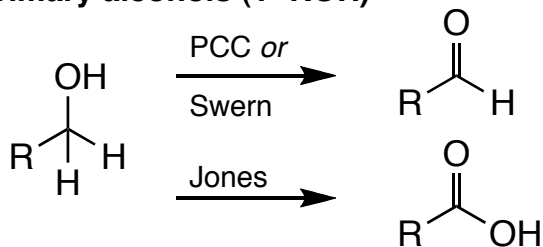


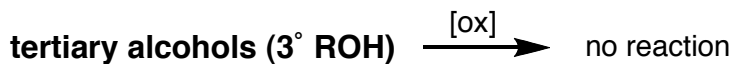
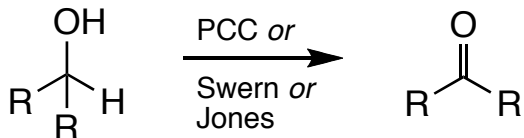
# CHM 422 Organic Synthesis, Dr. Laurie S. Starkey

## Common Oxidation Reactions

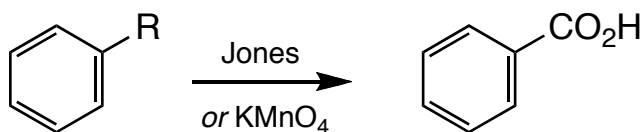
### primary alcohols (1° ROH)



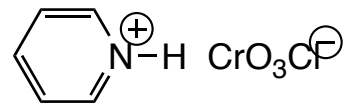
### secondary alcohols (2° ROH)



### benzylic carbons (if R is not a quaternary carbon)

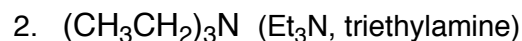
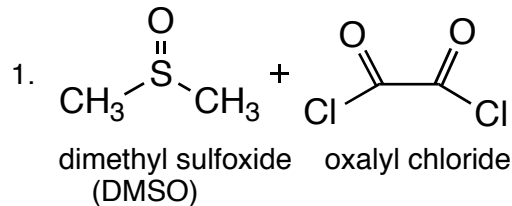


### PCC



pyridinium chlorochromate  
(CrO<sub>3</sub>-py-HCl)

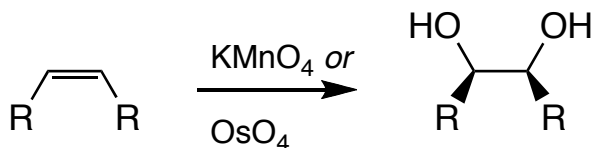
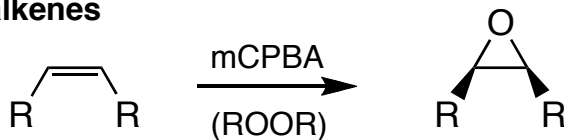
### Swern (2 steps)



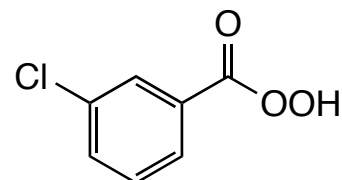
### Jones (chromic acid)



### alkenes



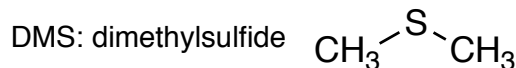
epoxidation



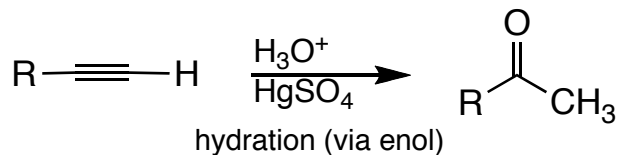
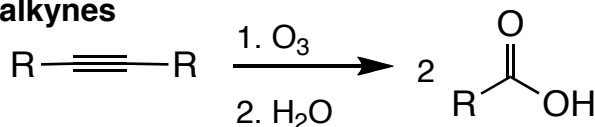
mCPBA:  
*m*-chloroperoxybenzoic acid

*cis* dihydroxylation (use H<sub>2</sub>O<sub>2</sub>/H<sub>3</sub>O<sup>+</sup> for *anti* dihydroxylation, via epoxide ring opening)

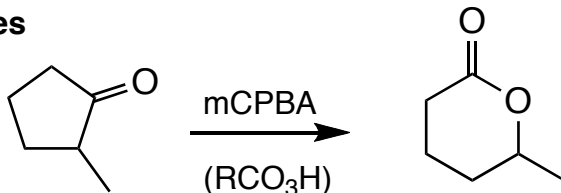
ozonolysis, followed by reductive workup



### alkynes



### ketones



Baeyer-Villiger reaction

migratory aptitude: hydrogen > 3° alkyl > 2° alkyl > phenyl > 1° alkyl > methyl