

Chem 345 – Organic Reactions

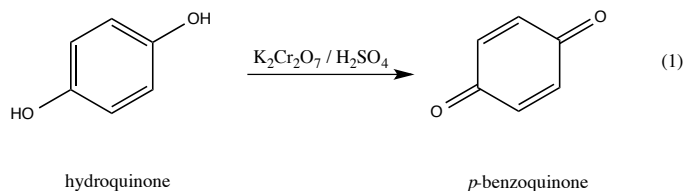
Chapter 18

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<http://www.chem.wisc.edu/areas/clc> (Resource page)

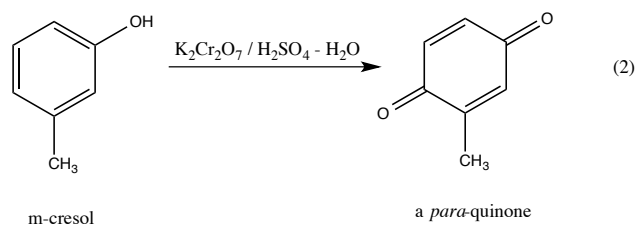
Oxidation of Phenols

Reactions:



hydroquinone

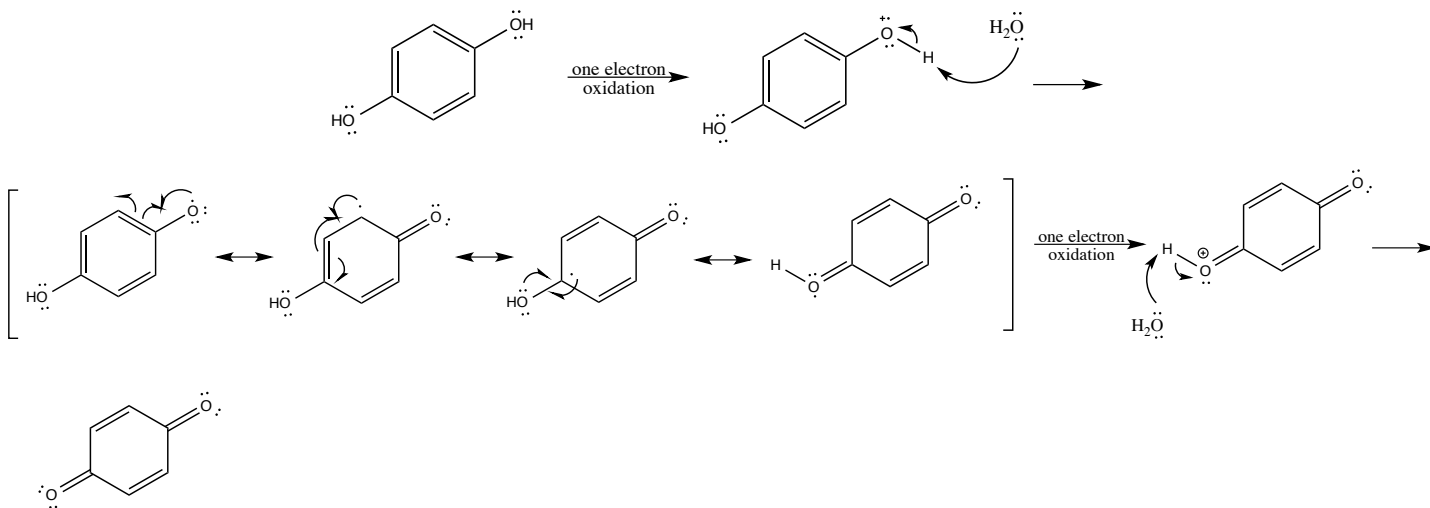
p-benzoquinone



m-cresol

a *para*-quinone

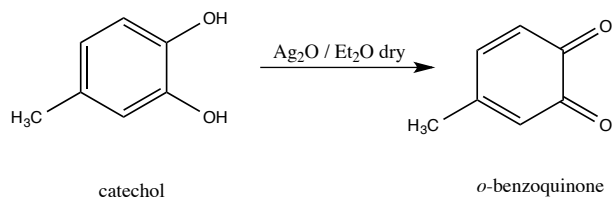
Mechanism



The oxidation of phenols is very important in certain biological processes. Most of the oxidation processes occur through radical mechanisms.

The *para*-quinones are more stable than their *ortho* counterparts. Certain phenols are readily oxidized to *para*-quinones – reaction 2 above.

Under mild conditions an *ortho*-quinone can be formed. See below.



catechol

o-benzoquinone

Under very harsh and vigorous conditions alkyl groups on the benzene ring will also oxidize.

