

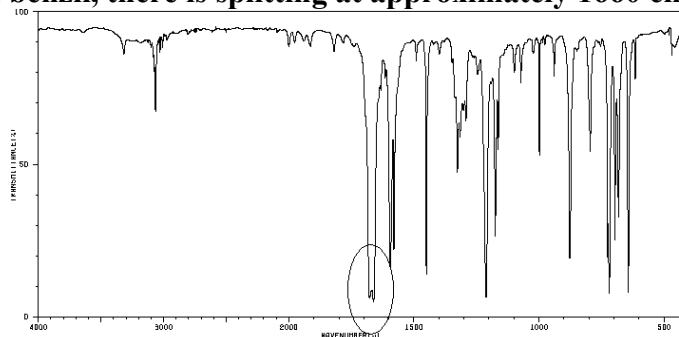
NAME: Answer Key

TA: Robert

Section: 1E

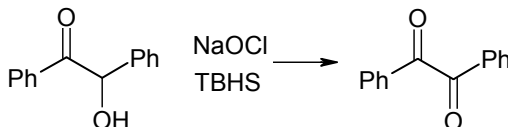
Quiz #3

1. For the FT-IR of benzil, there is splitting at approximately 1660 cm^{-1} , why? (4pts)



The compound has 2 carbonyl groups. If one carbonyl group stretches, the other one has to move as well since they are very close. Their motions are coupled with each other.

2. Benzoin is oxidized in a phase transfer catalysis (PTC) reaction with bleach to form benzil. What is the catalyst used in today's PTC reaction? (2pts) Draw the reaction scheme showing the starting material and product. (4pts) No mechanism is necessary because it is unknown.



Catalyst: TBHS

3. Why the reaction called phase transfer catalysis? What are the phases? (4pts)
The catalyst (TBHS) is used to transfer ions between each phase. The two phases are organic and aqueous. PTC is used because the useful anion is not shielded by solvent molecules. Once transported and reacted, the leaving group is group back to the original phase and easily extracted. See page 43 in reader.
4. What physical property determines which liquid layer will be on top during the extraction? (2pts)
Density
5. In today's column chromatography, what is the stationary medium? (2pts) Explain briefly the proper procedure for packing your pipette column. (2pts)
Stationary media: alumina. See procedure on page 48.