

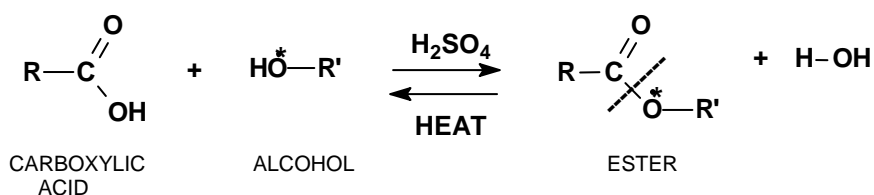


## Helpful Hints - *t*-Amyl chloride

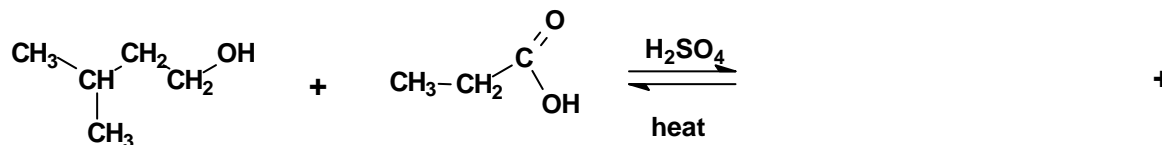
- \* Whenever a separatory funnel is used, do not discard any fraction unless you can account for your product. An easy method to ascertain which layer is which is the following: Add about 2-3 mL of water into a test tube, and place the test tube lip around the "takeout arm" of your separatory funnel. The bottom layer is released through the stopcock into the test tube containing the water. Upon agitation, observe whether the mixture is homogeneous. By deductive reasoning, you now know (hopefully) which layer is which!!!

## PREPARATION OF ISOAMYL ACETATE - HOMEWORK QUESTIONS

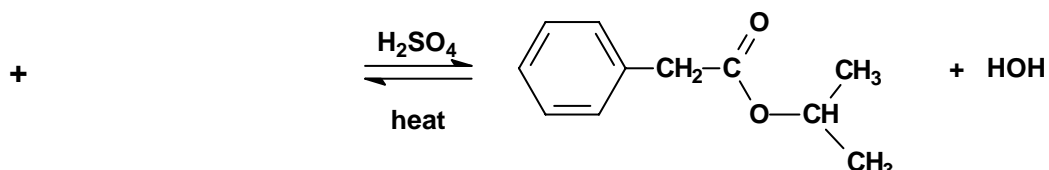
The general equation for the Fischer esterification reaction involving any carboxylic acid and any alcohol is given below. Complete the equations with the required structures. You should be able to determine that **R** comes from the carboxylic acid and the **R'** is part of the alcohol portion of the ester.



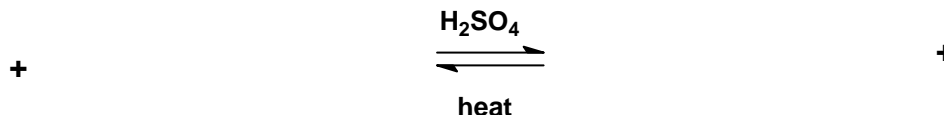
1. Complete and balance the following equation



2. Complete and balance the following equation



3. Give the **names and structures** for the two reactants required to prepare **methyl benzoate**. Also give the structure of the ester. (Hint: the ester is used as the starting material in the nitration of methyl benzoate).



### Methyl Benzoate

4. Describe **two** conditions or procedures that can be used to shift the equilibrium to the right in the Fischer esterification reaction.