**CHE 2060: Pre-lab quiz for synthesis of methyl salicylate**

*Due upon your arrival in lab.*

*Read the lab materials and the text and search engines to find answers to these questions.*

**1.** List each chemical used in the lab. Use SDS sheets to list each chemical’s largest hazards and the precautions that should be taken to avoid accidents and exposure.

**2.** This lab involves an esterification reaction.

(a) Draw Lewi structures of the reactants.

(b) Label electrophiles and nucleophiles.

(c) Diagram out the reaction mechanism for the esterification.

**3.** What is the boiling point of methanol? How does it compare to the reaction temperature?

**4.** During the week 1 reaction, why is it important to maintain the reaction volume? What would happen if you allowed the volume to reduce as methanol boils off?

**5.** Find the densities of dichloromethane and water and use them to predict whether the organic layer would be on the top or bottom.

**6.** What is the purpose of the sodium bicarbonate wash of the organic layer?

**7.** What is the biggest danger as you evaporate the dichloromethane solvent away from the methyl salicylate product in week 2?

**8.** What physical property(ies) does thin layer chromatography (TLC) take advantage of?

**9.** What structural aspect causes salicylic acid and methyl salicylate to absorb uv light?

**10.** What would you expect to see on the TLC plate if your esterification reaction was incomplete?