

Experiment #5a: Oxidation of Secondary Alcohols with NaOCl

When you distill be sure to distill into a graduated cylinder. That way you can know when you are half way done. CA

Boil off a good amount of the final yield to ensure that the solvent is removed from the product. To prevent boiling off the desired product, periodically remove the beaker from the hot plate. LM

I noticed that if you use a wooden stirring stick when you evaporate the solvent there are small bubbles forming around it. For most of the experiments, when the solvent had completely evaporated there were no bubbles around the wooden stick. That's what usually notified me that the evaporation was complete and it was time to remove the solution from the hot plate. MZ

Evaporation I always thought was tricky, but I eventually managed by checking my theoretical yield. Whatever that was (assuming the calculations were correct) gave me an idea about when only the product was left. Its not perfect but it worked for me. Again just make sure to complete the prelab calculations well. DF

When you distill be sure to distill into a graduated cylinder. That way you can know when you are half way done.

The lab requires that you slowly add the Clorox over a ten minute period, to help with this a separatory funnel could be used which would allow the Clorox to drip slowly. KB

When boiling off the solvent make sure that you don't boil off too much but also make sure that you do not leave too much of the solvent in the beaker. Look back at the physical constants and use that to identify the boiling points of both the solvent and the product. Most of the solvent boils off at around 40 degrees Celsius. Use a thermometer to help with the boiling process. JS

Make sure to mix the KMnO_4 and CuSO_4 very well in the mortar with the pestle. LC

Don't forget to record the temperature when the acetic acid, bleach, and methylcyclohexanol are combined. This causes an exothermic reaction. Also, don't forget to record the temperature range for the distillation process.

It is the best idea to collect the distillate in a graduated cylinder. Then you can record the volume of your distillate without having to transfer it. RR

Make sure you record the time you started everything so you can keep track of how much time you have to wait when you add different solutions to the round bottom flask. JV

since there are so many substances involves, please remember to describe the smell, viscosity, color and amount for each of the substances also when heating or cooling down, record the TIME AND TEMP
TM

This lab is a very long lab that took me over time. make sure you know exactly what you are doing so you can carry out the lab as efficiently as possible. Also, for part B and the Schiff's reagent, don't worry if you see no change in the first couple minutes. It takes about 10 minutes for the solution to turn a deep purple. This would be a good time to just clean up and get everything ready. NT

There are qualitative tests used to compare/contrast your product and methylcyclohexanone references. It is really only necessary to do one and not both since you just want to confirm your product. AG

A couple of tips for this lab:

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-This experiment tends to run a little long so get there early.

-Record the changes in temperature when adding bleach.

-Pre-heat the thermwell before setting up the distillation apparatus so that you can immediately proceed to gather the distillate.

-After distillation, set up a hot water bath so that it is ready when you need to evaporate the solvent, make sure you are using a pre-weighed beaker to do so.

-Gently extract the distillate (no shaking) to prevent any emulsion. BL

Instead of using the 15mL of acetic acid, ask the professor if you could lower it to 8 mL of acetic acid. this will give a better product. JM

To speed up the evaporation you can set the beaker directly on the hot plate, instead of a hot water bath. If you do, you must be really careful to remove the beaker from the heat as soon as it stops boiling; this means that all your solvent has evaporated and all that is left is your product. GL

Keep an eye on the temperature when distilling. Letting it over boil off might affect your final yield. YM

When adding the Clorox, make sure the student knows to keep an ice bath handy. This will insure that the temp doesn't not go beyond 40 C. Do not attempt to smell the solution, it will kill your olfactory senses. JM

Performing extra dichloromethane extractions in the separatory funnel greatly improves product purity based on the spec analysis SF