May 2020

LabChemistry_IS2_20160413_Camera1_Seg02.pdf

Participants: IS2 (male voice, only hand is visible), S1 (male student, not verbal, dark slicked back hair), S2 (undergraduate TA, female voice, not visible), S3 (female voice, not visible), S4 (female student, not visible)

Context: IS2 prepping students on the day's lab experiment

0:00
xxx ((no dialogue))
0:21
xxx IS2: uh
xxx so uh
xxx this is our last uh: (.)
xxx last (one) experiment.
xxx so which have two parts.
xxx so the first part is about the synthesis,
xxx and the next part is the (.)
xxx uh purification.
xxx so:
xxx uh:
xxx basically it's uh the synthesis of lidocaine.
xxx so if you have uh preview the: (.) lab manual, so
xxx it- uh the synthesis has two parts.
xxx so the-
xxx the first parts it uh: (.2)
xxx uh you have a (.3)
xxx ((writes on board))
xxx you have a (mean) and a (.) another reagent is (.3)
xxx ((writes))
xxx th-this one.
xxx so: uh:
xxx normally th-this reaction
xxx you have this, (.2)
xxx ((writes))
xxx so
xxx you you got the products ((pause))
xxx ((writes))
xxx so uh basically uh:
xxx the-the-the procedure for this reaction is
xxx you have a flask,
xxx so you put this to a reagent inside your flask,
xxx and also you need uh (.)
xxx you n-you you need a-acid which is uh:
xxx (replace) your uh (citric) acid. (.2)
xxx ((writes))
xxx and this is the: third reagent.
xxx and uh:
xxx you just let it stir,
xxx and uh: um (.3)

xxx so after you finish this (.) the steps,
xxx so you put three reagents inside the flask,
xxx then you add uh: (.2)
xxx twenty five mil uh:
xxx uh sodium acetate to (quench) this reaction.
xxx because this reaction is-
xxx is uh:
xxx finish very fast.
xxx so
xxx probably only uh for several minutes
xxx then (.) after you add the sodium acetate (.) inside
xxx this flask
xxx you will see some precipitation↑ (.)
xxx out of this flask.
xxx so then,
xxx so
xxx before you-
xxx uh
xxx during this,
xxx you need to prepare more than
xxx uh one
xxx uh probab-
xxx uh:
xxx more than one hundred.
xxx uh:
xxx one twenty mil uh uh (prechill) water.
xxx because you need to use water to quench this reaction
xxx too.
xxx so:
xxx the first part (.) about uh sixty mil
xxx uh
xxx water
xxx you need to add this mixtu-um
xxx r-r-reaction mix to dilute it.
xxx and then,
xxx you will do the v- uh vacuum filtration.
xxx because you have solid precipitation.
xxx and uh
xxx this is your (.1) product for this-
xxx for for the first step.
xxx so
xxx uh
xxx after you add six mil uh
xxx water inside this flask,
xxx so
xxx the next thing you just do the filtration.
xxx uh vacuum filtration.
3:00
xxx uh (.3)
xxx which is li-
xxx so it’s (.2) uh:

xxx so
xxx during the vacuum filtration,
xxx uh
xxx you need to (.) use uh the-the rest of them.
xxx so
xxx which is the six mil (.) prechill water from here,
xxx so one half for the (.) for- for the flask,
xxx and the other half for the filtration.
xxx so f-f-for the filtration,
xxx you need to add this
xxx not
xxx uh:
xxx one p-portion.
xxx you need to add for several portions.
xxx so during
xxx u-uh
xxx maybe
xxx so for each part maybe f- only fif-
xxx fifteen mil,
xxx to wash the (.) to wash this
xxx uh:
xxx solid.
xxx so,
xxx so the thing is,
xxx when you add the first part,
xxx inside the (.) a funnel,
xxx so
xxx make sure you (.) get get this
xxx uh:
xxx the pinch clamp out.
xxx and you add them.
xxx and then (.)
xxx reapply the pinch clamp to get the vacuum.
xxx so don’t just let the vacuum on
xxx and let let uh
xxx add the
xxx you know
xxx and the-
xxx >the- the- the<
xxx the water.
xxx so just make sure (.)
xxx >when you add-<
xxx when you add the water-
xxx before you add the water,
xxx let this (.) off,
xxx and then
xxx add the water then
xxx let the vacuum on.
xxx ok?
xxx so
xxx probably for four times.
xxx to wash the (.) solid.

xxx so
xxx after you finish the step,
xxx you need to use a- (.1)
xxx so this is the funnel, (.1)
xxx and y-you
xxx uh
xxx so this is funnel.
xxx and you have the (.) solid and the-
xxx and the funnel.
xxx so
xxx you can use uh-
xxx uh:
xxx a way-
xxx uh (which)-
xxx ((pause))
xxx so you can
xxx uh:
xxx put
xxx uh
xxx uh:
xxx a ((incomprehensible)) paper on top of the solid.
xxx and you can use a small beaker (.) to press it.
xxx because
xxx the
xxx the most important thing for the first- first step
xxx you need to
xxx you need to remove the water
xxx as uh: much as possible.
xxx because
xxx any water inside th-this-
xxx in the first step will influence the (.) yield of next step.
xxx so make sure you remove the water as much as possible.
xxx so that's why we need to use a beaker
xxx to press the solid to make sure all the (.) water can-
xxx can go.
xxx ok?
xxx so-
xxx so doing (.) you can use a beaker,
xxx to press-
xxx to press this
xxx uh
xxx solid.
xxx so:
xxx according to manual,
xxx at least five minutes.
xxx for this step.
xxx and then I will give you after this step,
xxx so I will give you a very a-a large (wetting) paper.
xxx you just transfer the solid onto the (wetting) paper,
xxx and
xxx also you need to (premake) a-
xxx a uh:

xxx a vial.
xxx and then transfer the vial.
xxx uh
xxx transfer the solid into a vial and get the-
xxx get the weight for the product.
xxx so
xxx after you finish (.) the first step,
xxx uh
xxx ((pause, erases board))
xxx so
xxx for the next step,
xxx uh (.)
xxx because the first step
xxx you have this,
xxx ((pause, writes on board))
6:00
xxx so-
xxx ((pause, writes))
xxx so next step is uh
xxx you have-
xxx this is the first step product.
xxx and this is a second reagent you need to add for- for-
xxx for the f-first-th-third step.
xxx so
xxx pro-
xxx this just a-
xxx nuc-
xxx is uh: (nuclear)
xxx nuclear ((incomprehensible))
xxx u-uh:
xxx replacement.
xxx so it’s quite
xxx uh
xxx straight forward.
xxx so
xxx you just got the crude lidocaine.
xxx ((pause, writes))
xxx so uh: (.1)
xxx so for this step,
xxx you have two reagents.
xxx so the for- for the solvent,
xxx so y-
xxx for
xxx you you need to use the ((incomprehensible)).
xxx so:
xxx you have a-
xxx because for the for the first step,
xxx oh sorry-
xxx don’t use a vial.
xxx it’s a rbf.
xxx so it’s a (.) one hundred mil rbf.
xxx so

xxx after finish the first step,
7:08
xxx S1: ((starts using phone))
xxx IS2: so this product should be in the- (.)
xxx in a one hundred rbf.
xxx and uh
xxx this is already in rbf right?
xxx and you need to uh-
xxx uh- (.1)
xxx you need add
xxx uh:
xxx solvent
xxx which is
xxx uh
xxx thirty mil ((incomprehensible)) inside your-
xxx uh-
xxx inside your rbf.
xxx so this is in rbf already and this is in rbf.
xxx so
xxx because
xxx for this step,
xxx it
xxx it should be stir.
xxx so:
xxx you need
xxx uh
xxx you need get a stir bar.
xxx so for
xxx uh
xxx you don't need to get the stir bar right now.
xxx after you f-
xxx after you (.) you go-
xxx you go to this step,
xxx go to the stock room and (.) get a stir bar for this
xxx reaction.
xxx we have a stir bar,
xxx so,
xxx y-you
xxx if you have your stir bar,
xxx so
xxx even though it is reflux,
xxx it
xxx you will
xxx uh
xxx you need to heat
xxx but don’t-
xxx you don’t need to use the
xxx uh
xxx (.)
INT what that the call
INT the stirrer?
INT no.

INT S2: ((incomprehensible))
INT IS2: so
INT if we do the (.) heating
INT we need to add
INT uh:
INT S2: (the stirrer?)
INT IS2: not stir-
INT S2: -oh
INT the boiling stone?=
INT IS2: =uh
INT boiling stone yeah.
xxx so we don't need to add the boiling stone.
xxx so if you (have start that already).
xxx okay?
xxx uh:
xxx so you have (.) solvent,
xxx you have first reagent,
xxx and then you add this ((points to board))
xxx inside your s-
xxx uh
xxx rbf.
xxx then you just set up the (.) reflux.
xxx right?
xxx so you- you- you- you are-
xxx you- you- you:-
xxx you already know how to set up the reaction but,
xxx the difference
xxx so f-
xxx is
xxx so
xxx uh:
xxx in your drawer w-
xxx you have
xxx uh::
xxx you have
xxx uh
xxx heating mantle right?
xxx S2: ((incomprehensible))
xxx ok so at the- (.)
xxx the beginning of part b,
8:39
xxx S1: ((puts phone away and listens))
xxx S2: you have to go to the stock room and get a heating
xxx mantle,
xxx and a stir bar.=
xxx IS2 =two of them?
xxx o-or just the stir- stir bar?
xxx S2: no
xxx the bar-
xxx (they have to get the:)=
xxx IS2: =(heating mantle)?
xxx S2: yeah.

xxx they have to get [the heating mantle.
xxx IS2: [ok
xxx S2: >they'll give it to em<
xxx >just go to the stock room and they'll give you
xxx everything you need,<
xxx and then for part b,
xxx make sure you use the stir plate,
xxx because in your l-
xxx in your big cabinet thing,
xxx there's a heating plate,
xxx and there's a stir plate.
9:00
xxx make sure you use the stir plate.
xxx ok?
xxx it says (stirrer) on it.
xxx IS2: mhm=
xxx S2: =u:m.
xxx IS2: yeah.
xxx [so:-
xxx S2: [and then always co-
xxx and connect the heating mantle that you get from the
xxx stock room to the ((incomprehensible)),
xxx otherwise (.) everything's gonna burn.
xxx IS2: ok so just go to the stir bar,
xxx get this one.
xxx so
xxx ok this one,
xxx S2: [(yeah)
xxx IS2: [I'm sorry.
xxx you have-
xxx so
xxx just go to store and get this one and the:
xxx for-
xxx and al-
xxx also the stir-
xxx uh
xxx S2: [yeah
xxx IS2: [stir bar.
xxx so you have the stir-
xxx stir in- in- in your-
xxx in your hood.
xxx and also you have this one.
xxx so-
xxx so the thing is just don't
xxx uh:
xxx connect the heating mantle direct into the-
xxx into (routage).
xxx use a very act-
xxx you know
xxx you should know this.
xxx right?
xxx and also,

xxx next thing is
xxx because the (toning),
xxx because this reaction is under reflux,
xxx so make sure (.) the joint
xxx the- the- the- the- two pieces are joined very you know
xxx tightly.
xxx so you can use a little bit-
xxx uh:
INT (what) th-that call?
INT S3: grease.
INT IS2: uh-
INT S3: ((louder)) grease.
INT IS2: uh yeah
INT grease.
xxx so
xxx because lots of students in from the
xxx uh
xxx lab-
xxx uh
xxx from different labs.
xxx so
xxx the- (.) they join
xxx uh
xxx the- the- the- here,
xxx the joints are not very
xxx uh
xxx tightly,
xxx so
xxx they just during the reflux,
xxx after they finish the reaction,
xxx it’s all-
xxx this-
xxx they just solid inside.
xxx there’s no solvent.
xxx so if there’s no solvent,
xxx which which means that the
xxx here is not
xxx you know
xxx very tightly,
xxx so
xxx your reaction won’t work.
xxx so just make sure
xxx here- (.)
xxx uh
xxx this part should be
xxx you know
xxx tightly joined.
xxx (.)
xxx and uh:
xxx so
xxx f- the react
xxx r-uh:

xxx reflux (.) is for one hour.
xxx so after one hour,
xxx you just
xxx uh:
xxx uh
xxx dissemble all the sam-
xxx sample the (set up).
xxx and uh
xxx get the rbf.
xxx and just
xxx uh-
xxx (.2)
xxx uh-
xxx uh-
xxx save- save- uh
xxx save the s- uh
xxx rbf in your drawer.
xxx so
xxx for the next part-
xxx for the next week
xxx you come here and you do- just do the purification.
xxx uh:
xxx S2: oh and you-
xxx you have to remember to remove the stirring bar.
xxx so once you're done with reflux call us over.
xxx IS2: yeah
xxx also you need to remove the stir bar.
xxx just call the two other TAs,
xxx and also for the : today
xxx uh
xxx (.)
xxx beta carotene reports is due today.
xxx and uh: (.3)
xxx oh ok
xxx so for the-
xxx for the first step,
xxx uh:
xxx so
xxx when you
xxx uh
xxx handle (.) the reagents,
xxx uh:
xxx try to
xxx uh:
xxx (.)
xxx just wear the >heavy duty gloves.<
xxx because they are very toxic and very corro-corrosive.
xxx just make sure (.) you are safe↑
xxx ((pauses))
xxx yeah that's (.) all of them.
11:28

xxx ((no dialogue))
14:39
xxx S4: so I get this and this,
xxx a:nd.
xxx do I need to: add this one directly into the solution,
xxx or do I get it from other like container and stir it?
xxx IS2: uh:.
xxx uh for this right?
xxx S4: yeah.
xxx IS2: ok.
xxx uh
xxx S4: alpha chloro ((incomprehensible)).
xxx IS2: so because this is in the burette.
xxx S4: mhm.=
xxx IS2: =so
xxx probably you can
xxx uh
xxx use a beaker or, (.)
xxx just-
xxx just use a beaker.
xxx S4: [cause
xxx IS2: [ok?
xxx S4: [if
xxx IS2: [don't
xxx don't use the:
xxx you know
xxx the graduate cylinder.
xxx uh you
xxx S4: [and then
xxx IS2: [wanna do this?
xxx S4: if-
xxx if I need-
xxx I need to mix this with this right?
xxx I need dissolve the dimethyl (.)
xxx um
xxx ((incomprehensible))
xxx into ((incomprehensible)) right?
xxx IS2: [mhm.
xxx S4: [in here.
xxx so can I directly pour the [((incomprehensible)) here?
xxx IS2: [oh::
xxx sure sure sure sure sure.
xxx yeah.=
xxx S4: =or whenever I pour this,
xxx the reaction will stop.
xxx IS2: yeah
xxx so af- uh
xxx after-
xxx during-
xxx so
xxx once you add the:
xxx the ((incomprehensible))

xxx inside this,
xxx (so) reaction is down.
xxx S4: [yeah
xxx IS2: [so
xxx yeah
xxx just
xxx yeah
xxx you can just do this to receive the:
xxx uh
xxx alpha chloral (.) from the burette.
xxx S4: directly?=
xxx IS2: =yes.
xxx S4: ok.
xxx IS2: mhm.

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