May 2020

LabChemistry_IS2_20160309_Camera2_Seg01.pdf

Participants: IS2 (ITA; blue shirt under lab coat), S1 (student, female, unseen), U1 (UGTA; female), U2 (UGTA; male, black jacket), S2 (student, male, unseen), S3 (student; female, unseen), S4 (student; female, unseen), S5 (student; female, unseen), S6 (student; female, curly low ponytail), S7 (student; female, floral hijab), S8 (student; female, unseen), S9 (student; male, unseen), S10 (student; male, unseen), S11 (female student, not visible), S12 (female student, not visible), S13 (student; male, black shirt under lab coat), S14 (student; female, unseen), S15 (student; female, unseen), S16 (student; male, beard), S17 (student; female, high black ponytail), S18 (male student, tall, short shaved hair & beard), S19 (student; male, unseen), S20 (male student, not visible), S21 (male student, not visible), S22 (female student, not visible), S23 (student; female, unseen), S24 (female student, not visible), S25 (female student, unseen), S26 (female student, unseen), S27 (male student, short), S28 (female student, dotted shirt & yellow gloves), S29 (male student, not visible), S30 (female student, not visible)

Context: IS2 gives instructions and then walks around the chemistry lab, making sure students are following procedure correctly.

0:00
XXX ((audio inconsistent))
0:29
XXX IS2: we- we use uh (.) large beaker.
XXX four mil- ah four hundred mil at uh chamber.
XXX so (.)
XXX uh we have solvent inside it. (.1)
XXX so we have some distance requirement.
XXX so here
XXX so: in theory
XXX we need to have uh
XXX point five uh centimeter.
XXX so how much solvent do we need to get this
XXX uh height?
XXX so:
XXX you use ten mil.
XXX uh solvent
XXX whatever you use
XXX because,
XXX in the first part

XXX you will use hexane
XXX pure hexane?
XXX and pure acyl acetate,
XXX in a one to one ratio
1:00
XXX ((audio inconsistent))
1:04
XXX uh: ten mil.
XXX so for example,
XXX for this part,
XXX you need five mil hexene
XXX and five mil acyl acetate.
XXX because (.)
XXX don’t let this height too high.
XXX uh don’t let this height too high.
XXX and uh this is one-
XXX uh
XXX height requirement.
1:18
XXX ((audio inconsistent))
1:22
XXX (a ruler)
XXX uh for the first time
XXX to do the (TLC).
XXX make sure
XXX the height is here is
XXX uh
XXX one centimeter.
XXX ok?
XXX so
XXX just make sure after you put this
1:34
XXX ((audio inconsistent))
1:39
XXX make sure uh
XXX your
XXX your- your- your sample
XXX is higher than the solvent.
XXX than the- than- than- than the other solvent.
XXX ok?
XXX because
1:46
XXX ((audio inconsistent))

1:52
XXX your solvent will dissolve in the- in the-
XXX y- your h-
XXX your sample will dissolve in the solvent.
XXX he will not go up. (.1)
XXX by the solvent.
XXX ok?
1:58
XXX ((audio inconsistent, keeps cutting out))
2:26
XXX IS2: so anoth- another-
XXX last uh: thing I need to uh explain to you is uh:
XXX about this plate.
XXX so
XXX in total we have uh:
XXX six
3:06
XXX ((audio cuts out))
3:13
XXX what's this uh:
XXX three spot.
XXX so: because (.) it kind of (.) confusing,
XXX so when I first have TA,
XXX uh last semester.
XXX so (.1)
XXX this is uh (.) standard.
XXX so make sure (.) it is
XXX because we have two uh:
XXX samples today.
XXX we need uh
XXX for the part b we have a reaction.
XXX so the reaction is uh:
XXX (.3)
XXX is uh malate to the (.1) uh (.1)
XXX fumerate. (.2)
XXX so:
XXX under uh (.)
XXX bromine and cataly-
XXX catalyze reaction.
XXX so:
XXX so f- for the: first (.) spot,
XXX make sure you use fumerate.
XXX not malate.

XXX ok?
XXX so this is the first standard point.
XXX so this is a product.
XXX this is your uh: (.)
XXX starting material.
XXX because we want to use TLC to monitor (.)
XXX the reaction.
XXX for this reaction.
XXX so for the first point, (.)
XXX use the fumerate.
XXX not (.) uh: malate.
XXX ok?
XXX and (the) for the zero,
XXX zero minutes,
XXX now which means uh
XXX before reaction starts,
XXX you need to uh spot
XXX uh for the zero uh
XXX for the zero minute.
XXX which means uh you have uh (.) flask.
XXX you put your uh (.)
XXX malate,
XXX this is starting material inside it.
XXX and also you need the solvent inside it.
XXX and then mix them.
XXX so
XXX before you add bromine,
XXX uh
XXX using your micropipette,
XXX get some uh
4:34
XXX ((audio inconsistent))
4:36
XXX so for a- uh:,
XXX the three uh this (.) ah:,
XXX for this point is
XXX uh
XXX after you add the bromine,
4:47
XXX ((audio inconsistent))
5:03
XXX uh (.)
XXX you will get this (clus) of crystals

XXX follow- following the (.) procedure.
XXX after you got your crystals (.)
XXX for this one.
XXX so you (.) can (.1)
XXX you can use uh crystallization
XXX to get this product.
XXX after you get this solid.
XXX using uh (.1)
XXX using uh s- (.1)
XXX uh methylene?
XXX methylene chloride
XXX to dissolve your product and uh
XXX spot here.
XXX then you go the whole spot
XXX to run the TLC.
XXX to check whether your reaction
XXX is good or not.
XXX whether you got your product or not.
XXX because you have standard
5:34
XXX ((audio inconsistent, keeps cutting out))
7:05
XXX IS2: uh: they send an email off to all of them.
XXX so.
XXX so uh because we have uh some uh:
XXX research today about
XXX how to uh international TA interact with uh your student,
XXX so um uh b- uh
XXX so just be uh relaxed.
XXX don’t
7:21
XXX ((audio inconsistent))
10:24
XXX S1: are you collecting the:
XXX [uh: report right now?
XXX IS2: [quiz?
XXX ah: no.
XXX S1: oh ok.=
XXX IS2: =yeah.
10:28
XXX ((pause))
14:10

TRP U1: is there money?
INR IS2: what?
XXX U1: are we getting money?
XXX are we getting paid?
XXX IS2: yeah sure.
XXX U1: [((unintelligible))
XXX U2: uh what?
XXX oh longer than one hour?
XXX lit.
XXX U1: ((unintelligible))
XXX IS2: ((giggles))
XXX U1: lit.
XXX oh-
14:21
XXX ((audio cuts out and/or IS2 does not have significant
XXX speaking role))
15:32
XXX IS2: ((addressing the whole class))
XXX so guys,
XXX uh: when you uh:
XXX prepare your (.) developing solvent,
XXX so: make sure you use a (.) watchglass to cover (.)
XXX your (.) beaker.
XXX because the solvent will evaporate very very quickly.
15:44
XXX ((audio cuts out and/or IS2 does not have significant
XXX speaking role))
15:56
XXX IS2: ((to S2))
XXX I think uh: (.)
XXX so the- the thing is
XXX you can (.) um
XXX prepare your solvent first,
XXX and uh after that (.1)
XXX you (.) uh: (.)
XXX do the TLC plate.
XXX ok.
XXX [so:
XXX S2: [ok.
16:05
XXX ((audio cuts out and/or IS2 does not have significant
XXX speaking role))
16:54

XXX IS2: so (.) uh
XXX why do you wash this?
XXX S3: uh
XXX just because I wanted to make sure we d-
XXX remember if I [washed it yesterday?
XXX IS2: [ah:
XXX S3: so I'll just give it a minute to dry
XXX and I'll be good to go.
XXX IS2: which solvent do you use to wash it?
XXX S3: what?
XXX IS2: which solvent do you use?
XXX (the) acetone?
XXX S3: yeah the acetone.
XXX IS2: you wanna use to (.) uh: (.)
XXX measure this (.) developing solvent right?
XXX S3: mhm.
XXX IS2: uh:,
XXX my suggestion is,
XXX try to not use any solvent to wash any of your (.)
XXX glassware.
XXX because (.) uh
XXX uh
COM I think uh for the part a
COM probably has some problem.
XXX yeah.
XXX S3: oh ok.=
XXX IS2: =yeah.=
XXX S3: =so I shouldn't
XXX IS2: but
XXX yeah
XXX S3: should I rinse it out with water again?
XXX IS2: no no no.
XXX don't use any solvent.=
XXX S3: =oh ok.=
XXX IS2: =so
XXX the thing is (.) u:m
XXX don't use y- your your owns?
XXX you can (.) borrow from others?
XXX S3: mhm.
XXX IS2: yeah.
XXX because any s- (.) tiny of the water,
XXX or acetone inside your (.) glassw-
XXX uh

XXX in your- in your beaker,
XXX will [influence][the]
XXX S3: [ok][I have] another beaker right here.
XXX IS2: ok sure.
XXX just use the other one ok?
17:44
XXX ((audio cuts out and/or IS2 does not have significant
XXX speaking role))
18:07
XXX because it will evaporate very quickly and uh
XXX you know.
XXX okay the reaction is dangerous enough.
18:13
XXX ((pause))
18:25
XXX IS2: (hi)
XXX uh
COM can you p- put
COM just put your (.) beaker↑
COM inside your hood,
COM don't (.) do (.) any (.) [things,
XXX U1: [yeah.
COM IS2: outside your hood.
XXX ok.
XXX U1: keep your TLC chamber in your (.)
XXX hood.
XXX S3: in my hood?
XXX oh ok.
18:39
XXX ((audio cuts out and/or IS2 does not have significant
XXX speaking role))
19:14
XXX IS2: uh:
XXX just put your (.)
XXX chamber↑ (.) in your hood?
XXX and then cover with a glass- glass- uh: watchglass.
19:19
XXX ((audio cuts out and/or IS2 does not have significant
XXX speaking role))
21:52
XXX S4: so I got my solvent in this (.)
XXX cylinder,
XXX and I need to get my ((indistinguishable))

XXX so: (.) I don’t need to wash this,
XXX [or (.) ((indistinguishable?))
XXX IS2: [no.
XXX you don’t need to wash anything.
XXX S4: so just put um (.) dimethyl fumerate
XXX in the cylinder that I just used?
XXX [or (.)]
XXX IS2: [uh::]
XXX [yeah.]
XXX S4: [do I use this one?]
XXX IS2: so do y-
XXX uh
XXX you use this for the:
XXX (developing) solvent (.) only
XXX [right?]
XXX S4: [ethyl:]
XXX [acetate.]
XXX IS2: [ethyl acetate.]
XXX pure [ethyl acetate.
XXX S4: [ethyl acetate.
XXX IS2: th- yes
XXX is- is fine,
XXX so,
XXX yeah you can use this to: measure
XXX a little bit
XXX because we don’t need too much
XXX uh: (.1)
XXX fumerate right?
XXX so:
XXX yeah.
XXX you can use this (.)
XXX glass (.) cylinder
XXX to measure.
XXX yeah. ((pause))
XXX S5: what spot?
XXX in the hood or: on the bench?
XXX IS2: oh it’s fine.
XXX here is fine.
XXX just make sure you use pencil.
XXX S5: [yeah.
XXX IS2: [don’t (.) not use uh: pen.
22:44
XXX ((pause))

22:53

XXX IS2: any problems?
XXX S6: no,
XXX so I'm just doing a centimeter-
XXX IS2: a centimeter.
XXX S6: uh-
XXX IS2: a centimeter yes.
XXX S6: ((inaudible))
XXX IS2: ((starts to walk away))
XXX ((turns back))
XXX uh,
XXX very tightly.
XXX because,
XXX if you use-
XXX ((bumps in S7))
XXX ((to S7)) uh sorry.
XXX S7: that's alright.
XXX IS2: ((to S6))
XXX uh,
XXX because you use,
XXX if you uh if
XXX uh (.2)
XXX if you (.) uh:,
XXX if you use your pen to draw a line
XXX very you know heavily?
XXX so that's the beaker on this plate
XXX will destroyed.
XXX so: which means
XXX uh
XXX you need to
XXX draw a line very lightly,
XXX just make sure you can see where (.)
XXX your spot is.
XXX S6: ok=
XXX IS2: =yeah.=
XXX S6: =just so I don't get it
XXX (upturned)=
XXX IS2: =yes.=
XXX S6: =ok. (thank you)
XXX S7: hi.
XXX IS2: hi.
XXX S7: do I put this in like this?
XXX IS2: yes.

XXX just uh:,
XXX attach the inside of your (.) beaker?
XXX yeah it's fine.
XXX ↑good.
XXX good job.
XXX ((starts to walk away))
XXX S7: um is there any way to turn the light on?
XXX IS2: ((turns back to S7))
XXX hm?
XXX S7: how do you turn the light on?
XXX IS2: oh.
XXX (the light).
XXX ((pause, walks away))
XXX IS2: hi.
XXX S8: we write on this side right?
XXX IS2: yes.
XXX so:
XXX yes.
XXX so this is a silicon s-support.
XXX S8: (mhm.)
XXX IS2: yes.
XXX one centimeter.
XXX uh: use your pencil?
XXX not pen?
XXX ((pause, walks away))
XXX ((walks around))
XXX IS2: ((to S9))
XXX hi uh:- (.1)
XXX oh.
XXX this is your:
XXX filter paper.=
XXX S9: =yeah.=
XXX IS2: =just put in the:
XXX attach the inside of your glassw-
XXX your beaker.
24:21
XXX ((pause))
24:50
XXX IS2: ((addressing the whole class))
XXX uh:
XXX so guys.
XXX uh:
XXX so uh:

XXX before-
XXX before you add your TLC plates on the chamber,
XXX so you can check the-
TTF check your TLC with a UV light.
XXX uh before you put in the chamber.
TTF make sure you-
TTF y- you actu- uh you m-
XXX make sure you
XXX uh spot your
XXX uh (.2) starting material
XXX on the plate.
XXX ok?
XXX so-
XXX so here- UV light is at corner
XXX uh of this room.
XXX U2: ((addressing the whole class))
XXX ((indistinguishable))
XXX hear that?
XXX go over to the UV light (.)
XXX and just check to make sure that
XXX you actually did it correctly.
XXX ok?
XXX IS2: yeah.
XXX U2: that's it.
XXX IS2: ((to U2)) thank you for explanation.
XXX ((laughing))
XXX U2: ((to IS2)) oh no problem.
XXX oh cause like one side can hear,
XXX but then the other side can't hear.
XXX IS2: ((to U2)) ↑good good good.
XXX S7: ((waves IS2 over))
XXX IS2: ((to S7)) yeah?
XXX S7: I'm just confused by the: (.2)
XXX plate.
XXX IS2: oh.
XXX S7: this is one?=
XXX IS2: =so:: for the part A,
XXX S7: yeah=
XXX IS2: =using smaller one,
XXX not use [las- larger one.
XXX S7: [oh:.
XXX ok.
XXX IS2: ok?

XXX so: yeah.
XXX because we only (two) spot here=
XXX S7: =[yeah
XXX IS2: [so this is=
XXX S7: =that's=
XXX IS2: =in a large
XXX S7: ok that's (where I) ((indistinguishable))
XXX IS2: right?
XXX S7: so we're just (gonna make the) one centimeter (mark)
XXX IS2: centimeter,
XXX very tightly
CLF don't use too much
CLF uh-
CLF ((grasping for word))
CLF S7: too much uh pressure?
CLF IS2: too much pressure,
XXX too much-
XXX yes.
XXX uh yeah
XXX and uh
XXX one centimeter is
XXX fine,
XXX and
XXX uh before you put this:
XXX plate?
XXX in your
XXX uh
XXX chamber?
XXX so you can check
XXX whether you- you actually
XXX put your sample
XXX on the plate.
XXX you can use U-UV light
XXX to check=
XXX S7: =ok=
XXX IS2: =before you put in your chamber
XXX S7: [ok
XXX IS2: [ok?
XXX yeah
XXX S7: and um
XXX I draw it exactly like this?
XXX IS2: uh one centimeter (is fine)
XXX one centimeter,

XXX S7: yes
XXX IS2: yeah
XXX maybe right here,
XXX right?
XXX S7: like right here?
XXX IS2: yeah.
XXX a little bit.
XXX yeah.
XXX S7: ok
XXX IS2: and you make a marker
XXX it be
XXX one two.
XXX so it not necessary,
CLF it is uh equi-
CLF uh
CLF >how do you say<
CLF equidistant
XXX between here here and here.
XXX just
XXX make sure y- you know where
XXX our two spot is.
XXX and make sure you spot
XXX where you have here.
XXX S7: ok.
XXX IS2: ok.
26:53
XXX ((pause))
28:00
XXX IS2: you spot already?
XXX S10: no not yet.
XXX IS2: ok.
XXX so- so as I mentioned before
XXX before you put in your chamber,
XXX can check with your (.1) UV light.
XXX S10: ok so,
XXX after I spot it,
XXX check with the UV light?
XXX IS2: then put in the chamber.
XXX S10: ok.
XXX IS2: if you don't have a:
XXX spot on your plate,
XXX so:
XXX do again,

XXX and check with the UV light,=
XXX S10: =ok.=
XXX IS2: =and put in the chamber.
XXX S10: ok.
XXX thank you.
XXX IS2: yeah.
28:22
XXX ((pause))
28:38
XXX S7: were we supposed to outline the circles?
CLF IS2: >no no no<.
XXX S7: [no right?
XXX IS2: [so
XXX this is fine,
XXX S7: uh huh.
XXX IS2: yeah.
XXX S7: [((indistinguishable))
XXX IS2: [and uh:
XXX S7: ok.
XXX IS2: so:
XXX you made a marker here?
XXX yeah.
XXX it's fine.
XXX [so,
XXX S7: [so
XXX you do this one time here and two times here?
XXX IS2: yes.
XXX one time here.
XXX and uh,
XXX so for the ten times,
XXX so if you spot one time right?
XXX make sure it is dry,
XXX then do the second time,
XXX make sure it is dry,
XXX S7: [oh:
XXX IS2: [do the third time,
XXX make sure it is dry,
XXX do the f- next time,
XXX S7: and where is the UV light again?
XXX IS2: where's the light, I can show you (right).
XXX S7: ok.
29:06
XXX ((pause, bad audio quality))

29:18
XXX IS2: the (short) wavelength.
XXX the- the left side.
XXX left side.
XXX yes.
XXX is it working?
XXX U2: hit it?
XXX hit it really hard?
XXX IS2: yeah yeah yeah.
XXX you need to repeat several times. ((pause))
XXX uh the oth- the other side is-
XXX is- is- is working.
XXX U2: oh there it is.
XXX ok,
XXX nope.
XXX no.
XXX IS2: yeah you can use the other side.
XXX U2: yeah you're gonna have to-
XXX IS2: I- I check the- the other side already.
XXX U2: yeah
XXX ((indistinguishable))
XXX IS2: ok.
XXX just use the other side.
XXX if- if it doesn't working here,
XXX I report to the Dr.
29:50
XXX ((pause, bad audio/unintelligible exchanges))
31:09
XXX you get out of your chamber,
XXX and make a marker of uh- for the solvent front,
XXX and then you check with UV light again,
XXX to see whether you have the spot.
XXX S11: [oh: okay.
XXX IS2: [where the- where the- where the spot is.
XXX S11: okay so I wait for the solvent to get to the point five
XXX centimeter [point?
XXX IS2: [yes. yes.=
XXX S11: =ok.
31:23
XXX ((bad audio/unintelligible exchanges))
32:48
XXX IS2: you see?
XXX S12: mhm.

XXX IS2: uh for the right side,
XXX you are fine,
XXX but uh I think on the left side you can spot maybe:
XXX two times.
XXX [ok.
XXX S12: [ok.
XXX IS2: because y-
XXX you don't see any spot on the left side right?
XXX S12: yeah [like barely.
XXX IS2: [((unintelligible))
XXX not- not the product.
33:01
XXX ((bad audio/unintelligible exchanges))
35:00
XXX IS2: ((addressing whole class))
XXX guys uh
XXX so:
XXX uh:
XXX for the:
XXX part a and the part b,
XXX so after you put your TLC plate (.) on the chamber,
XXX so
XXX uh
XXX you need to wait until you got the solvent front.
XXX until you get a solvent front
XXX i-it's away from the-
XXX eh is uh-
XXX point five centimeter
XXX to the:
XXX to the uh:
XXX top of your plate.
XXX and uh
XXX after you got this uh distance,
XXX uh make sure you mark the for the solvent front.
XXX because you need to calculate an rf value.
XXX if you don't uh mark the solvent front,
XXX you cannot calculate your r- r- rf value.
XXX ok?
XXX so this is for the also for the part b.
XXX make sure you mark the solvent front.
XXX ((pause))
XXX S8: (I have a question for you.)
XXX uh:

XXX so
XXX I spin this around and place it in?=
XXX IS2: =yes.=
XXX S8: =and then uh,
XXX do I leave this in and put the-
XXX the uh watchglass back on?
XXX or:?
XXX IS2: yeah sure.
XXX S8: ok.
XXX IS2: just put in the-
XXX so you put the TLC plate in your chamber,
XXX and then cover with the glass again,=
XXX S8: =ok=
XXX IS2: =and then wait
XXX until you got the solvent front
XXX is maybe uh is
XXX point five centimeter=
XXX S8: =mhm=
XXX IS2: =away from the
XXX top side,=
XXX S8: =mm take it [out
XXX IS2: [and you
XXX get it out
XXX and then make a marker for the solvent front,
XXX S8: ok.=
XXX IS2: =because you need to calculate rf value
XXX right?
XXX so that’s it.
XXX S8: alright thank you.=
XXX IS2: =and check with the UV light again=
XXX S8: [ok
XXX IS2: [to see whether you
XXX uh
CLF where your uh
XXX S8: solvent?
XXX IS2: s- uh no
CLF uh where your sam-
XXX uh where your: y-your- your sample is.
XXX S8: ok.
XXX thanks.
XXX S13: for my part, like,
XXX I was (.) when I (placed it),
XXX IS2: uh huh

XXX S13: (it went off) immediately.
XXX is that normal?
XXX because, (.1)
CLF it was like really fast and then now it’s like going
CLF slowly.
CLF IS2: w-w-w-w-what w-what is the problem?
XXX S13: no like the TLC plate?
XXX IS2: uh huh.
XXX you put it into your chamber?
XXX S13: yeah [and then,
XXX IS2: [and then?
XXX S13: it went (.) extremely fast,=
XXX IS2: =oh! it doesn’t matter.
XXX S13: ok.
XXX IS2: so this,
XXX this is normal.
XXX S13: ok.
XXX IS2: it should- it should be very fast.
XXX S13: ok.
XXX IS2: (if we don’t need) it fast?
XXX S13: but then it slows down.
XXX IS2: uh: yeah.
XXX S13: ok.
XXX IS2: it’s fine.
XXX just wait.
XXX it still is moving.
XXX S13: ok.
XXX IS2: it just-
XXX it is- it is moving.
XXX but,
XXX very slowly.
XXX so after you’ve gone maybe,
XXX uh:,
XXX (forty five) centimeter,
XXX along uh (.) away from the top side?
XXX right?
XXX and then you (get it) out,
XXX and make a s-
XXX marker,
XXX make a marker,
XXX a:nd uh
XXX because you need to calculate the rf value right?
XXX S13: yup.

XXX [ok.
XXX IS2: [so.
XXX that's it.
XXX ((walks away))
XXX ((to S14))
XXX so um.
XXX you d- you d- you do a first time right?
XXX and then you y- make it the dry,
XXX and do it the second time?
XXX S14: mhm!
XXX IS2: and make it dry,
XXX and do it the third time?
XXX S14: [yeah
XXX IS2: [just make sure every time,
XXX it- it is dry before you do the next time.
XXX S14: ok!
XXX alright.
37:45
XXX ((audio cuts out, exchanges aren't complete))
41:17
XXX IS2: did you- did you see the solvent front?
XXX S15: yeah.
XXX IS2: did you see the solvent-
XXX it is right here right?
XXX S15: uh huh.
XXX IS2: a-
XXX you will s- go up right?
XXX S15: yeah.
XXX IS2: eventually he will get point five centimeter.
XXX that i-
XXX S15: =yeah=
XXX IS2: =that is our requirement.
XXX [right?
XXX S15: [and that's when I-
XXX IS2: that's for the uh marker.
XXX right here.
XXX solvent front.
XXX S15: [ok.
XXX IS2: [ok?
XXX did you got it?
XXX S15: yeah.
XXX IS2: ok.

XXX ((pause, walks away))
XXX ((to S16))
XXX did you finish the (part) a already?
XXX S16: not yet.
XXX IS2: uh did you spot your-?
XXX S5: yeah I did.
XXX IS2: oh you did?
XXX S16: yeah.
XXX IS2: uh you can put in your (.) chamber.
XXX S16: alright.
XXX IS2: did you check the UV light already?
XXX S16: yeah I did.=
XXX IS2: =ok.
XXX you got ((unintelligible)) right?
XXX S16: yeah.
XXX IS2: ok.
XXX so.
XXX just the other side of the filter paper?
XXX ((leans over))
XXX yeah. cool.
XXX so::
XXX you need to wait,
XXX until your solvent-
XXX you see the solvent front is moving?
XXX right?
XXX S16: yeah.=
XXX IS2: =solvent front.
XXX after you got the solvent front is away from (.)
XXX the point (.) five centimeter away the top your-
XXX of your TLC plate?
XXX S16: yeah.
XXX IS2: so:
XXX get out of here?
XXX and make- make a ↑marker (.)
XXX for the solvent front,
XXX S16: yeah.
XXX IS2: because (.) if you do not get a solvent front,
XXX you cannot calculate rf value.
XXX S16: yeah yeah.
XXX IS2: so:.
XXX just a reminders.
XXX S16: ok.

XXX IS2: ((to S17))
XXX so far so good?
XXX S17: ((nodding)) mhm.
XXX IS2: so:
XXX don’t forget to m- mark your solvent front.
XXX S17: yeah. alright.
XXX IS2: ((walks away))
42:44
XXX ((audio inconsistent))
43:37
XXX and uh:
XXX after it is-
XXX your plate- tlc plate is dry,=
XXX S18: =mhm=
XXX IS2: =and check- check the uv light,
XXX S18: [mhm
XXX IS2: [and then (.) outline where your spot is.=
XXX S18: =ok.
XXX IS2: (.1) for both of the-
XXX this two spot.=
XXX S18: =ok.=
XXX IS2: =ok?
XXX S18: (sounds good).
XXX IS2: ((pause))
XXX (is it) good?
XXX S19: I’m just waiting for [((incomprehensible))
XXX IS2: [>yeah yeah yeah< ah-
XXX a little bit yeah.
XXX °it’s fine.
XXX did you get two spot?
XXX before you put it into [((incomprehensible))
XXX S19: [yep.
XXX yeah I saw uh-
XXX I saw two black spots.=
XXX IS2: =cool.
XXX just (.) so: (.)
XXX uh:
XXX also for the part b,
XXX before you put in your chamber,
XXX S19: [(yeah)
XXX IS2: [just make sure you have six spot- spot.
XXX make sure you have six s-spot.
XXX and then you put in the chamber.

XXX S19: ok.
XXX IS2: and uh:
XXX after (.1)
XXX you get out your:
XXX TLC plate?
XXX and make uh
XXX make your marker for the TR-
XXX for the solvent front.
XXX yeah.
XXX S7: ok.
XXX and then when we measure it,
XXX IS2: [uh huh.
XXX S19: [how long (.) it says-
XXX IS2: just use your: ruler.
XXX S19: oh just use the ruler?=
XXX IS2: =yeah.=
XXX S19: =ok.
XXX ((indistinguishable))
XXX IS2: you don't need to: (.)
XXX uh huh.
XXX S19: the distance (.1) traveled by the solvent.
XXX IS2: [yeah. you just
XXX S19: [so: where do I start that?
XXX do I just start from the bottom?
XXX IS2: just from the origin.
XXX you-you make a m- le- (.) right here?
XXX you- you-you- you-
XXX S19: yeah I marked the origin.
XXX IS2: for the:
XXX o-one centimeter right?
XXX S19: yup.
XXX IS2: and thas is your starting point.
XXX S19: yup.
XXX IS2: and y-you measure from
XXX [not from
XXX S19: [oh from there?
XXX IS2: all the way to the solvent front,
XXX and all the way to the s-spot where you have.
XXX S19: ok.
XXX thank you.
XXX ((pause))
XXX IS2: hi uh
INT did you finish the part a already? ((slurred))

INT S20: what?
XXX IS2: did you finish the part already?
XXX ah-
XXX S20: yeah it’s drying.
XXX IS2: oh it just waiting dry?
XXX [ok.
XXX S20: [yeah.
XXX IS2: so:
XXX I think it (dries) very quickly.
XXX yeah.
XXX you can check this,
XXX did you make a marker for the solvent front?
XXX S20: yeah.=
XXX IS2: =oh cool good.=
XXX S20: =yep.=
XXX IS2: =so just check with the uv light and outline the spot.
45:18
XXX ((audio inconsistent))
45:39
XXX IS2: uh:
XXX so you finish part a,
XXX a:nd uh
XXX you don’t need to calculate rf r-right now because (.)
XXX rf value- (.)
XXX you can finish the rf value after you finish
XXX [(with this lab).
XXX S21: [yeah yeah ((incomprehensible))=
XXX IS2: =so [just do the part b ok?
XXX S21: [((incomprehensible))
XXX ok.=
XXX IS2: =yeah.=
XXX S21: =thank you.=
XXX IS2: =just (.)
XXX set up your (.) reaction,
45:51
XXX ((audio inconsistent))
45:56
XXX S22: I used uh (ethyl fumerate) and this is what I got.
XXX IS2: ((gasps)) really?
XXX S22: ((laughing)) yeah.
XXX IS2: ((laughs))
XXX well which solvent did you use?
XXX S22: uh::

CLF IS2: pure (ethyl acetate)?
XXX S22: ((incomprehensible))
XXX IS2: pure (ethyl acetate)?
XXX or one [to one ratio?
XXX S22: [oh sorry I-
XXX no I used the uh:
46:11
XXX ((audio inconsistent))
48:05
XXX IS2: oh uh also for part b.
XXX so.
XXX it's- it's the same.
XXX don't do ten times
XXX don't l- ((indistinguishable))
XXX for part b=
XXX S23: =just
XXX just do it once,
XXX and then [spot it.
XXX IS2: [yeah.
XXX just use one- one uh=
XXX S23: =one capillary,
XXX to spot it.
XXX IS2: do- do ten times.=
XXX S23: =ok=
XXX IS2: =not ten times from (.) you:r sample.
XXX S23: ok.
XXX IS2: yeah.
XXX S23: alright.
XXX IS2: that's why you got so large.
XXX S23: ok.
XXX IS2: ok?
XXX S23: thank you.
48:23
XXX ((audio inconsistent))
48:33
XXX IS2: make- make sure you check.=
XXX S24: =yeah.
XXX [I'm just-
XXX IS2: [uh::
XXX S24: um=
XXX IS2: =ok so for now I think uh::
XXX (while you're waiting) right?
XXX S24: yeah.

XXX IS2: you can prepare for the part b,
XXX you d- because they are independent.
XXX S24: [((incomprehensible))
XXX IS2: [you don't need to rely on the: results of part a to do the:
XXX part b,
XXX so you can- you can set up
XXX ↑eh::
XXX you can- you can prepare your tlc plate for- for- uh: first.
XXX but uh before you finish the part a.
XXX uh
XXX before you set up your reaction,
XXX so you need to finish part (.) a because,
XXX S24: yeah.
XXX IS2: because you need to calculate the time for the part b so:
XXX S24: yeah [just the-
XXX IS2: [just-
XXX S24: I mean I could do this,=
XXX IS2: =you can do this [just
XXX S24: [but
49:09
XXX ((audio inconsistent))
52:40
XXX IS2: uh hi
XXX you don't need to calculate the rf value right now.
XXX S7: [oh:!
XXX IS2: [just- just do the part b,
XXX ok?
XXX ((giggling))
XXX S7: [is this a good rf?
XXX IS2: just- just [make sure you can finish the
XXX because,
XXX S7: eighty eight.
INT IS2: uh (.) you use uh
INT pure ethyl acetate, right?
XXX S7: oh no this is for the
CLF IS2: length? [length?
XXX S7: [trimethyl fumerate.
XXX IS2: I mean, which solvent do you use to:
XXX [run the
XXX S7: [ethyl acetate.

XXX IS2: pure ethyl acetate [right?
XXX S7: [yeah.
XXX IS2: yeah is fine.
XXX S7: ok (cool).
XXX IS2: so: for now,
XXX you don’t need to calculate it right now,
XXX just p- do the=
XXX S7: =(I could) do that later.
XXX IS2: yeah d- do it later.
XXX and then the- because part b you need a lot of time.
XXX yeah.
XXX ((pause))
XXX keep your plate.
XXX keep your plate.
XXX because we need to calculate all the plate- tlc plate.
53:16
XXX ((inconsistent audio))
53:39
COM IS2: no::.
COM S25: sorry?
XXX IS2: so uh- did you finish part a already?=
XXX S25: =yeah.
XXX IS2: ok.
XXX uh: you can set up the: reaction.
XXX for the part b,
XXX right?
53:48
XXX ((inconsistent audio))
53:54
XXX IS2: oh!
XXX you got-
XXX you put (.) two [things already?
XXX S26: [yeah.
XXX (I) spotted at zero [((incomprehensible))
XXX IS2: [zero?
XXX S26: ((incomprensible)) (ten drops).
XXX IS2: good job.
XXX S26: ((pause)) ten drops (of ten percent) is okay right?
XXX IS2: yes.
XXX S26: (so) add it the [((incomprehensible))?
XXX IS2: [(four).
XXX ((incomprehensible))
XXX and then (.) record the time,

XXX S26: ((incomprehensible))
XXX IS2: swirl- every two minutes,
XXX swirl your flask.
XXX S27: uh:
XXX ((incomprehensible)) for the fifty millimeter?
XXX IS2: uh huh.
XXX don’t wash your (.) flask.
XXX S27: ok.=
XXX IS2: =uh huh?=
XXX S27: =(and um) but not for the twenty five (this one right)?
XXX IS2: it doesn’t fit right?
XXX S27: yeah.
XXX IS2: bu:t y-
XXX suppose- y-
54:27
XXX ((inconsistent audio))
54:39
XXX IS2: uh: the (cork) for- for your-
XXX this one?
XXX S27: [mhm.
XXX IS2: [so if you-
XXX if (.) it is- does-
XXX if all the (cork) it doesn’t fit,
XXX just usi:ng (.)
XXX fifty mil.
XXX S27: okay.
XXX IS2: yeah.
XXX fifty mil.
XXX do you have only? (.1)
XXX S27: I have the twenty five and the fifty.
XXX but only (cork) for the fifty.
XXX IS2: where is the (cork)?
XXX S27: that=
XXX IS2: =where=
XXX S27: =that works for the fifty.=
XXX IS2: =we- we have new (cork) right [here.
XXX S27: [oh: ok.
XXX IS2: you can check the (cork) right here.
XXX S27: ok thank you.
XXX IS2: so far so good?
XXX S18: yeah (it’s still in there).
XXX IS2: okay.
XXX so: uh: yeah.

XXX just draw uh: for the part b.
XXX and set up reaction,
XXX good.
55:13
XXX ((pause/inconsistent audio))
55:25
XXX S7: so you just measure the um
XXX from here to the middle of this for the distance by the
XXX solute and then
XXX from one centimeter to here for the solvent.
XXX ((incomprehensible))
XXX S28 (ok.)
XXX IS2: u:m
XXX yeah.
XXX she's right but my suggestion is
XXX so: uh:
XXX you- you need to measure,
XXX from the origin to the solvent front,
XXX right?=
XXX S28: =mhm.=
XXX IS2: =this is one thing and >the other thing is<
XXX >my suggestion is< calculate the front.
XXX not the middle because,
XXX i- this spot has middle but
XXX for this one if you (.)
XXX see the middle right here right?
XXX it th- it is wrong.
XXX so the solvent,
XXX the- the- the front is- (.)
XXX is your standard ok?
XXX S28: ok.
XXX IS2: (is your) standard.
XXX ((incomprehensible)) spot front.
XXX ((incomprehensible)) solvent front.
XXX and also the sample- uh: sample front.
XXX S28: ok.
XXX U2: (just) keep these with you.
XXX cause (.) they're getting to the point where uh=
XXX IS2: =for me?
XXX U2: yeah yeah they're getting to the point where they're doing
56:17
XXX ((inconsistent audio))
56:50

XXX IS2: so::
XXX this is your- (.)
XXX where your marker is.
XXX S29: [uh huh.
XXX IS2: [just (.) don't (.) do it (.) right (.) here.
XXX S29: oh ok.
XXX IS2: s-sorry.
XXX make uh- make a marker right here.
XXX S29: (ok.)
57:00
XXX ((inconsistent audio))
57:55
XXX IS2: than the other two.
XXX U2: >yeah yeah yeah.<
XXX but that's why they don't use it.
XXX because it's too high.
XXX [((incomprehensible))
XXX IS2: [oh so for part b we use one to one ratio right?
XXX U2: no no=
XXX IS2: =>no no no no<=
XXX U2: =part b,
XXX yeah actually,=
XXX U1: =it's a three to one.=
XXX IS2: =three to one ratio.
XXX but for the part a,
XXX ((incomprehensible))
XXX and uh:
XXX one to one ratio is the: middle?
XXX U2: yeah yeah.
XXX [((incomprehensible))
XXX IS2: [((incomprehensible))
58:13
XXX ((inconsistent audio))
58:39
XXX uh::
XXX point five away from the top of your tlc plate,
XXX and make a (dot) here,
XXX make a mark for the solvent front,
XXX a:nd uh:
XXX mark- outline where your- where your source- uh spot is,
XXX so that's it,
XXX for the the part a.
XXX S30: ok.

XXX like you-
58:53
XXX ((inconsistent audio from here until the end))
59:50