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LabChemistry_IS2_20160330_Camera1_Seg04.pdf

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Participants: IS2 (ta, glasses, white coat), S1 (female student), S2 (female student), S3 (female student), S4 (male student), S5 (male student), S6 (male student), S7 (other ta, female), S8 (male student, tall with slight beard) S9 (other ta, male), S10 (female student), S11 (male student)

Context: IS2 is walking around helping students with their chemistry lab.

0:00
```
xxx        ((pause))
```
0:12
```
xxx IS2:   so guys uh:
xxx        when you do the (reflux),
xxx        make sure the: solution is (boiling).
xxx        if it is not (boiling) enough uh:
xxx        raise the uh voltage.
```
0:27
```
xxx        ((pause))
```
0:56
```
xxx        are you tired?
xxx S1:    a little bit. ((laugh))
xxx IS2:   you can- you can sleep.
xxx S1:    I don't think that's a good idea.
xxx IS2:   (ah okay to-).
xxx        ((pause))
xxx S1:    ah: thank you so much!
xxx IS2:   yep. ((laugh))
```
1:12
```
xxx        ((pause))
```
1:27
```
xxx        hi uh:-
xxx        ((IS2 speaks in Chinese with students))
```
1:41
```
xxx        ((pause))
```
2:13
```
xxx S2:    so-
xxx IS2:   do you know how to do: calculations?
xxx S2:    so you said [(it was) um.
xxx IS2:              [mhm.
xxx S2:    we have to take (.) the grams per mole right?
xxx        ((mumbling)) (so grams-) grams grams
xxx        and then the-
```

```
xxx IS2:    so basically what you need to do is.
xxx         can I write [here?
xxx S2:                 [yeah yeah yeah of course.
xxx IS2:    which acid did you use?
xxx S2:     [uh.
xxx IS2:    [this one uh ((undecipherable)) [acid right?
xxx S2:                                     [((undecipherable)) acid.
xxx IS2:    so uh we have the equation for the:
xxx         ((pause))
xxx         and the-the mass is uh equals the:- the.
xxx         m: molecular weight right?
xxx S2:     yeah.
xxx IS2:    molecular weight times the mole.
xxx         right?
xxx         so basically, (.) how much mass you need to use for the
acid
xxx         is-
xxx         you have the:-
xxx         because you need (to) check here,
xxx         you-you need to use acid for the point ones (more),
xxx S2:     mhm.
```

2:59

```
xxx IS2:    so this is point one more, and the molecular weight for the
xxx         acid is [uh: seventy four.
xxx S2:             [seventy four.
xxx IS2:    and you've got this (math) right?
xxx S2:     so it's [((undecipherable))
xxx IS2:            [but for the- but (too) you need to got the volume,
xxx         so: you need to divide it by the density,
xxx         so the density here is the:
xxx S2:     point nine nine.
xxx IS2:    okay.
xxx         and then that.
xxx         and you've got the volume okay?
xxx S2:     yeah.
xxx IS2:    for the acid.
xxx         okay?
xxx         so this is (the) whole calculation.
xxx         for the al- uh: for the ((undecipherable)),
xxx         uh you need to weigh it.
xxx         so you don't need to know the-
xxx         you need to- you don't need to get the volume you just get
xxx         the
xxx         uh mass it's enough.
xxx         so for the alcohol- so because it- if you check with the:
```

```
xxx        here,
xxx        so which is- uh point,
xxx S2:    zero-.
xxx IS2:   zero five.
xxx        and times the:
xxx S2:    molecular weight.
xxx IS2:   [okay (is it)
xxx S2:    [which is a- here it would be this one.
xxx        um
xxx IS2:   ((undecipherable))?
xxx S2:    yeah.
xxx IS2:   seventy four right?
xxx S2:    yeah.
xxx IS2:   seventy four okay then you've got amount of the alcohol.
xxx S2:    so (I'm getting) this amount right now [from the stockroom
xxx IS2:                                          [yeah just-
xxx S2:    right?
xxx IS2:   yeah i- m: uh:
xxx        so
xxx        yes. (.) and you just tell them which alcohol you are going
xxx        to use,
xxx S2:    uh huh.
xxx IS2:   and they just give them [to you.
xxx S2:                            [oh okay.
xxx IS2:   a:nd right now so- so just go to the stockroom right now.
xxx S2:    okay.
xxx IS2:   and got the alcohol,
xxx S2:    okay.
xxx IS2:   and uh weigh (.) (several) of them.
xxx        so for the acid, you need to weigh the volume, from the
xxx        ((undecipherable)).
xxx S2:    oh.
xxx IS2:   okay? and for the alcohol.
xxx        so: basically you- you got the vial.
xxx S2:    [mhm.
xxx IS2:   [and uh it contains the alcohol right?
xxx S2:    [yeah.
xxx IS2:   [so you need to weight the total amount.
xxx        then you ((undecipherable)) all of them and you weigh it
xxx        again,
xxx        do the subtraction.
xxx        and you know how much y-you have transferred out of the
xxx        uh b- [uh uh- out of the vial.
xxx S2:          [okay.
xxx IS2:   okay?
```

```
xxx S3:      [can you just double check to see [((undecipherable))
xxx IS2:        [yeah?                              [okay sure
xxx          ((pause))
xxx          uh:
xxx          so comes in the bottle,
xxx          and then come out of the- comes out of the: top,
xxx          so:
xxx          did you add the (boiling) stone?
xxx S3:      yes.
xxx IS2:     okay.
xxx          and acid?
xxx S3:      [yes.
xxx IS2:     [sulfuric acid?
xxx S3:      yes.
xxx IS2:     okay.
xxx          so: did you turn (.) this on?
xxx          (.2)
xxx          oh it's good.
xxx          (.2)
xxx          yeah it's good
xxx S3:      okay.
xxx IS2:     so: maybe after twenty minutes?
xxx          so ten minutes? maybe,
xxx          if it is not (boiling) enough,
xxx          just raise a little bit.
xxx S3:      okay
xxx IS2:     okay make sure it is (boiling)
xxx S3:      okay.
xxx IS2:     because (boiling) means (.) reaction.
xxx          (if it's) not (boiling),
xxx          no reaction between the acid and the alcohol.
xxx S3:      oh: [(makes-)
xxx IS2:         [okay?
xxx S3:      okay thank you.
xxx IS2:     yep.
xxx S4:      um [(sorry can you help me with my) ((undecipherable))?
xxx IS2:        [yep? (.) sure sure.
xxx          ((pause))
xxx S4:      I opened up this (thing) and it just (.) spurted out.
xxx IS2:     oh really?
xxx S4:      yeah.
xxx IS2:     so:.
xxx S4:      yeah I don't know why.
xxx IS2:     basically you need to turn this off,
xxx          and uh.
```

```
xxx         ((pause))
xxx         probably because the f:low rate is too [high right?
xxx S4:                                           [((undecipherable))
xxx IS2:    so basically you need to do is
xxx         uh:
xxx         this is for the water.
xxx         and this is- oh this is for the water [okay?
xxx S4:                                           [(yeah)
xxx         ((undecipherable)) just (.) do a-
xxx IS2:    a little bit.
xxx         so change here. (.) adjust here.
xxx S4:     okay.
xxx IS2:    did you adjust here?
xxx S4:     i- (.) uh (.) yeah.
xxx IS2:    don't change [here.
xxx S4:                  [okay.
xxx IS2:    uh: just turn a-a little bit o-on.
```
6:01
```
xxx S4:     okay.
xxx IS2:    and uh.
xxx         ((pause))
xxx         so,
xxx         uh: th-th-
xxx         that water get uh get in (.) your-
xxx S4:     I don't know.
xxx         ((pause))
xxx IS2:    make sure it is dry if-
xxx         ((pause))
xxx         okay it's good.
xxx S4:     it's fine right?
xxx IS2:    yeah.
xxx S4:     cause there's (.) ((undecipherable)) the water (goes in
for)
xxx         into it right?
xxx IS2:    yeah, sure.
```
6:30
```
xxx         ((pause))
```
7:40
```
xxx         yep (everything's) good.
xxx S5:     okay.
xxx IS2:    just turn this on,
xxx S5:     (mhm).
xxx IS2:    and uh wait until it is boiling,
xxx S5:     m.
xxx IS2:    if it is not boiling, and the- increase a little bit.
```

```
xxx S5:    okay.
xxx IS2:   okay?
xxx S5:    okay.
xxx IS2:   so basically:, it's right.
xxx S5:    okay.
xxx IS2:   so- so right now you need to do is set- set up for the:
xxx        separate-separator funnel.
xxx S5:    mhm.
xxx IS2:   and uh: also clean a: a vial, for next week.
xxx S5:    okay thank you.
xxx        ((pause))
xxx IS2:   is it boiling?
xxx        oh! (why) got the red (.) color?
xxx        (.3)
xxx S6:    (is it supposed to be)?
xxx IS2:   .hhh
xxx        I haven't seen this last semester.
xxx        (.2)
xxx        did you add the right uh: (sulfuric) acid?
xxx S6:    yeah. twenty five right?
xxx        (.2)
xxx IS2:   yeah.
xxx S6:    yeah.
xxx        should I stop it?
xxx        ((pause))
xxx IS2:   it's okay I think it's okay so you add the right acid
xxx        ((undecipherable)) the: [alcohol right?
xxx S6:                           [(uh:)
xxx        yeah so the-
xxx IS2:   did you add anything else?
xxx S6:    (I'm thinking) two (.) methyl ((undecipherable)) acid
xxx        so I used ((undecipherable)) acid and two methyl
xxx        ((undecipherable)).
xxx IS2:   m:.
xxx S6:    ((undecipherable)) right?
xxx IS2:   mhm.
xxx S6:    okay.
xxx        and then I put that- I just put twenty drops of um
xxx        (sulfuric) acid.
9:00
xxx IS2:   did you wash: the (.) rbf [before
xxx S6:                             [yeah I washed it
xxx IS2:   you washed it?
xxx S6:    yeah.
xxx IS2:   how do you wash it?
```

```
xxx S6:    (with) acetone.
xxx        ((pause))
xxx IS2:   with acetone?
xxx S6:    yeah.
xxx IS2:   and uh:
xxx S6:    yeah.
xxx        and that's pretty much all I did.
xxx IS2:   just note- uh: ((undecipherable)) not too much a-a-acetone
xxx        before you add the acid and the: alcohol.
xxx S6:    [((undecipherable))
xxx IS2:   I mean- did you wait until it's dry?
xxx S6:    ((undecipherable))
xxx IS2:   oh okay.
xxx S6:    ((undecipherable))
xxx IS2:   okay it's fine.
xxx S6:    it's fine?
xxx IS2:   so: yeah.
xxx        I think the-the color,
xxx        (.2)
xxx        it's a little bit weird.
xxx        but I-I-I-I- so uh y-you are ((undecipherable)) and the
acid
xxx        is uh three methyl right?
xxx S6:    two.
xxx IS2:   two methyl.
xxx        two methyl?
xxx S6:    yeah.
xxx IS2:   lemme check- hi
xxx S7:    ((undecipherable))
xxx        oh it's okay that's fine.
xxx        that's happened to mine when I took the lab too.
xxx IS2:   really?
xxx S7:    yeah it happened to mine.
xxx IS2:   [wh-what happened (to this?)
xxx S7:    [did it turn orange first?
xxx S6:    uh-uh-
xxx S7:    cause mine turned from orange to purple
xxx        [it was like the coolest thing ever.
xxx S6:    [i-i wouldn't say orange i'd say like [red.
xxx IS2:                                         [it's (very-)
xxx        [i-i-i-it's for different ester)?
xxx S7:    [it's fine.
xxx        what did you have?
xxx S6:    two methyl.
xxx S7:    I had the same thing.
```

```
xxx IS2:   really?
xxx S7:    yeah.
xxx IS2:   oh okay.
xxx S7:    it's fine.
xxx IS2:   ((laughs))
xxx S7:    I-I-I got like a really good grade on this so it's fine.
xxx        cause eventually it'll like-
xxx        once you start doing like the:
xxx        extraction and everything, it'll-
xxx S6:    (okay).
xxx S7:    I think it was the (.) boiling stone actually cause-
xxx IS2:   boiling stone?
xxx S7:    cause the color for mine I remember I was watching it
xxx        and the color spread from the boiling stone.
xxx S6:    yeah [that's (what it did).
xxx IS2:        [oh okay.
xxx S6:    [((undecipherable))
xxx S7:    [the color spread from the boiling stone right? yeah.
xxx        it's fine.
xxx IS2:   okay.
xxx S7:    you'll still get like a good ((undecipherable)).
xxx S8:    ((undecipherable))- (what should we put the)
xxx        ((undecipherable)) (in)?
xxx IS2:   what?
xxx S8:    what should we put the- the ((undecipherable)) in?
xxx IS2:   oh the ((undecipherable))?
xxx S8:    (yeah what-)
xxx IS2:   I think it's good.
xxx S8:    [((undecipherable))
xxx IS2:   [uh h- just g- uh: follow the (menu).
xxx        so fol-follow the menu first.
xxx        I think it should be: forty right?
xxx S8:    yeah I think so but I'm not [I don't remember
xxx IS2:                              [forty.
xxx S8:    cause I wrote down everything in the manual
xxx        (it didn't) say.
xxx        yeah it doesn't really say.
xxx IS2:   okay just put it in the:- uh i-in the forty,
xxx S8:    [(uh huh)
xxx IS2:   [and the- maybe after- maybe [uh
xxx S8:                                 [(based on the:-)
xxx IS2:   five minutes,
xxx        if it not boiling, uh raise.
xxx        increase.
xxx S8:    okay.
```

```
xxx IS2:   okay?
xxx        ((pause))
xxx S9:    hey ?
xxx        ((undecipherable)) acid?
xxx IS2:   where? what- do I need to get some (.) acid?
xxx S9:    [uh
xxx IS2:   [I checked the- all the-
xxx S9:    you checked them already?
xxx IS2:   yeah and there's no (.) [acid.
xxx S9:                           [(uh)
xxx IS2:   which acid?
xxx        [oh (.) several of them.
xxx S9:    [((undecipherable))
xxx IS2:   .hhh (let's see) this o:ne is not.
xxx S9:    you checked in that right?
xxx IS2:   I check in the other side.
xxx        I-I don't-
xxx S9:    I don't think it should be there.
xxx        ((pause))
xxx S10:   ((undecipherable))
xxx        she said they only refill this more than like point one.
xxx        [five and (that) it's less than [point zero five
xxx S9:    [okay (you're good) .            [okay
xxx        so you're good
COM IS2:   is-isn't that for-for you?
COM S9:    huh?
COM IS2:   isn't that for- is- y-you mean the acid?
xxx S9:    no no no this is something else.
xxx IS2:   okay.
xxx        okay okay [okay.
xxx S9:    this was  [((undecipherable)).
12:00
xxx IS2:   I think- m-most of people got uh [this right.
xxx S9:                                     [okay.
xxx        so it's fine.
xxx        [((undecipherable))
xxx IS2:   so if it is not enough then just tell me.
xxx        ((pause))
xxx S10:   uh ?
xxx IS2:   yeah.
xxx S10:   so bad news
xxx        I spilled my solution, (.) so I had to do it again,
xxx        but when I- when I redid it,
xxx        um [I-
CLF IS2:      [wh-wh- how- what happened to you?
```

```
CLF        to your solution?
CLF S10:   uh I spilled it when I was putting it into the thing.
CLF        I was about to clamp it,
CLF        [I spilled it accidentally.
CLF IS2:   [oh you're- you're trying to clamp this?
CLF S10:   yeah I was trying to clamp it [and then
CLF IS2:                                 [okay so this-
CLF S10:   [I spilled the whole solution,
CLF IS2:   [this is the- just the rest of the: solution right?
CLF S10:   no it was like gone.
CLF IS2:   all of them are gone?
xxx S10:   like- it was like-
xxx IS2:   this is the new [one?
xxx S10:                   [this is new.
xxx IS2:   okay okay.
xxx S10:   and then I-I put in um [five point eight.
xxx IS2:                          [this is only the acid?
xxx S10:   yeah [yeah.
xxx IS2:        [okay.
xxx S10:   I put five [point eight of the ((undecipherable)) [acid.
xxx IS2:              [just-                                 [(did
you)
xxx        did- talk to the stockroom?
xxx S10:   okay.
xxx IS2:   and get the: [alcohol,
xxx S10:                [((undecipherable))
xxx IS2:   and then
xxx        uh: return this.
xxx        do them,
xxx        and you just turn them [you need to refuel okay?
xxx S10:                          [okay.
xxx        ((pause))
xxx S11:   (can I ask you a question)
xxx        uh sorry.
xxx        um what setting should this be on?
xxx IS2:   uh forty should be good.
xxx        oh it's too high.
xxx        oh:
xxx        so basically what I normally do is
xxx        you can uh: get a high (value),
xxx S11:   mhm.
xxx IS2:   and after it is boiling,
xxx        maybe you can decrease a little bit.
xxx        I think fifty is enough.
xxx S11:   (cause) it's been on for a while and [(nothing.
```

```
xxx IS2:                                          [oh-
xxx        you waited for a while?
xxx S11:   yeah.
xxx        and there's no boiling or anything.
xxx        so.
xxx IS2:   okay it's weird.
xxx S11:   yeah.
13:46
xxx        ((pause))
14:09
xxx IS2:   do you have another? uh:
xxx        heating ((undecipherable))?
xxx        (.3)
xxx S11:   yeah.
xxx IS2:   so use this one.
xxx        so y-you can wait uh-uh: for (.) another five minutes?
xxx        so if still doesn't work,
xxx        change a new one,
xxx        because I'm not quite sure whether it is not good.
xxx S11:   (alright).
xxx IS2:   okay.
xxx S11:   I don't know if it's the plug or if it's that.
xxx IS2:   so (we) got this- it is (linked) together already? or
xxx        you put- [clamp them
xxx S11:            [it was already linked together.
xxx IS2:   okay.
xxx        ((pause))
xxx        so uh:
xxx        (.3)
xxx        how long have you wait for this?
xxx S11:   lemme check ((undecipherable)) .
xxx        five six minutes seven minutes.
xxx IS2:   seven minutes only?
xxx S11:   mhm.
xxx IS2:   and uh:
15:00
xxx        w-w-what-what's [(the position)?
xxx S11:                   [it was- it was pretty high it was at
xxx        sixty then I put it at eighty.
xxx IS2:   oh okay.
xxx        so you just put it at eighty,
xxx        and wait for another five minutes,
xxx        so if it doesn't work (.) change this,
xxx        and the (black key) out and ((undecipherable)),
xxx S11:   okay [gotcha will do thank you.
```

```
xxx IS2:        [and-
xxx        yeah.
xxx        ((pause))
xxx        this is ((undecipherable)) ((talking to himself))
15:26
xxx        ((pause until the end of the video))
16:04
```