Video « Preparing a stock solution from a liquid »

Time	Text (Woman) (Man)
00 :09	Man: So, our salt solution is ready. Now, the second step is to dilute 100 times this copper solution. How do we proceed? Woman: As earlier it is simple, we can take the 100 ml flask and adding 1 ml of the copper solution. Man: That's right, but this is for analysis so we need only 10 ml. We won't take a 100 ml flask if we only need 10 ml. Woman: You are right, we won't waste the copper solution. Well, in that case, we can take a 10 ml flask, and we divide everything by 10. We sample 0.1 ml, which is 100 µl, and we fill the flask. We will get the same concentration. Man: You are right, but we don't have anything to sample 0.1 ml here …
00 :57	Man: Otherwise, we can take another 10 ml flask and make an intermediate solution. So, we first dilute 10 times the copper solution, and then we sample this intermediate solution and we dilute it again 10 times. And so, we will get a 100 dilution in this flask. Woman: So, if we do that, it means that we put 1 ml of copper solution and then we fill the flask, therefore we will get a 10 times dilution. And then, we make another 10 times dilution to get a final dilution of 100 times. So, again, we sample 1 ml of the intermediate solution and we fill the flask. Man: That's it. Woman: So, we sample 1 ml each time. We have tools to precisely sample 1 ml so that's all right. Man: Let's do it.
01 :33	Woman: Ok let's go. So, I will start by the first dilution of 10. Man: Wait, why are you putting water into the flask? Woman: Well, this is what I learnt in the good laboratory practices. We always start by putting a small amount of the solution used for the dilution in the flask and then, you add the stock solution. Because, for example with acid solutions, it is better to avoid to put the stock solution directly into the flask! It is better to put a small amount of water first, and then to add the stock solution. Man: Alright, but the problem is that we don't make the dilution with water but with the salt solution we prepared earlier. Woman: Ow that's right, my mistakes.
02 :18	Woman: It doesn't matter, I will do the same with the salt solution, so I will sample a small amount of it. I'll use the 5 ml pipette. I won't use a huge quantity of solution anyway, it's just a matter of putting a small amount in the flask.
02 :36	Woman: Do you think 2 ml is enough? Man: Yes, that's alright. Personally, I'll sample the 1 ml of copper solution.
02 :58	Woman: So, we are using this flask. I am just pushing this away. Man: Yes.
03 :11	Woman: Nice. And then I will fill the flask. Man: I don't understand, why all the solution is not completely dropping?! Woman: Wait! Which pipette did you use? If it is a pipette with two marks, you must stop between the two marks, and not empty all the pipette. Which pipette is it? Man: No, there is only one mark on this one. Woman: So, in that case you need to empty all of it. Man: I know, but it is not completely dropping! Woman: It is because your inclination angle is wrong. You must have an angle around 45° … Like that yes. Do not put the solution on the edge of the flask. Man: That's it, all the solution has dropped. Woman: Perfect.
03 :44	Woman: So, I can fill the flask with the salt solution. That's it. Are we good?

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	Man: Yes. Woman: Perfect.
03 :57	Woman: Can you mix it? Man: I'm on it. Woman: Because if we don't mix it, our second dilution will be wrong. Man: Some parafilm... Woman: Personally, I will put a small amount of salt solution in the second flask.
04 :17	Woman: Wait, you need to change your pipette. Man: Why? Woman: Because you took the stock solution with this one, so you could rinse it and then check that there is no remaining water in it in order to avoid any dilution with water. But it is better to simply take another pipette. Man: We have another one over there. Woman: Yes, take this one. Man: This one has two marks. Woman: So, be careful, do not empty all of it. You must stop at the second mark, either you will add too much of the solution.
04 :53	Woman: Ow, there is an air bubble. Man: Yes, an air bubble entered in the pipette. Woman: You must remove it! Man: Yes. And so, now I need to stop at the second mark, do I? Woman: Yes, you do. It is here. In that way, you get the exact volume. This pipette is more precise. Man: Here we go.
05 :23	Man: That's it. We have our 100 times dilution. Woman: So, in fact, we won't use this one because it is the intermediate solution. We'll use this one. Perfect.