

NMR Sample Preparation Instructions

Figure 1

This is an example of a properly prepared sample. The NMR tube is 17.5 cm (7 inches) long. The sample volume fills the tube to a depth of 4.5 cm. The sample solution is clear and a single phase.

Figure 2

This is an example of an incorrectly prepared sample. It has CHCl_3 as the solvent not CDCl_3 . This sample will not be suitable for NMR. There will be no data in the student's account.



Figure 3

This is an example of an incorrectly prepared sample. The sample volume is too small. It must fill the 20.5 cm NMR tube to a depth of 4.5 cm. It is not suitable for NMR.

Figure 4

This is an example of an incorrectly prepared sample. It has two liquid phases (note lighter colored solution at the bottom of the NMR tube). This sample will not be suitable for NMR. It will result in either very poor data (broad, unsymmetrical, or split lineshape) or no data in the student's account. If the smaller second phase is on top, the same incorrect result will be obtained.

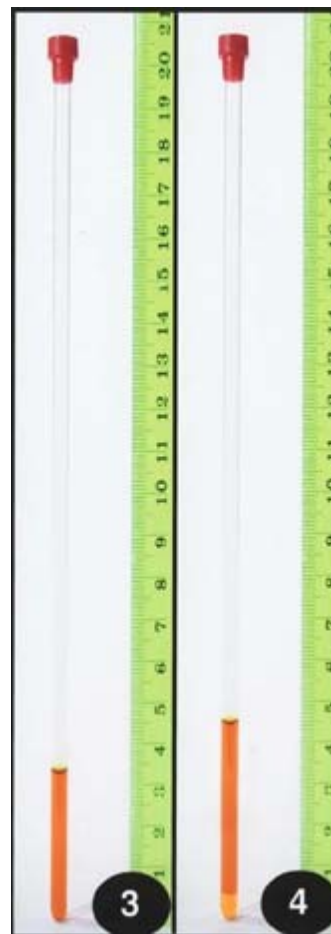


Figure 5

This is another example of an incorrectly prepared sample with two liquid phases. This sample will not be suitable for NMR. It will result in either very poor data (broad, unsymmetrical, or split lineshape) or no data in the student's account.

Figure 6

This is an example of an incorrectly prepared sample with two phases, one liquid and one solid. It has solids on the side and in the bottom of the NMR tube. This sample will not be suitable for NMR. It will result in either very poor data (broad, unsymmetrical or split lineshape) or no data in the student's account.

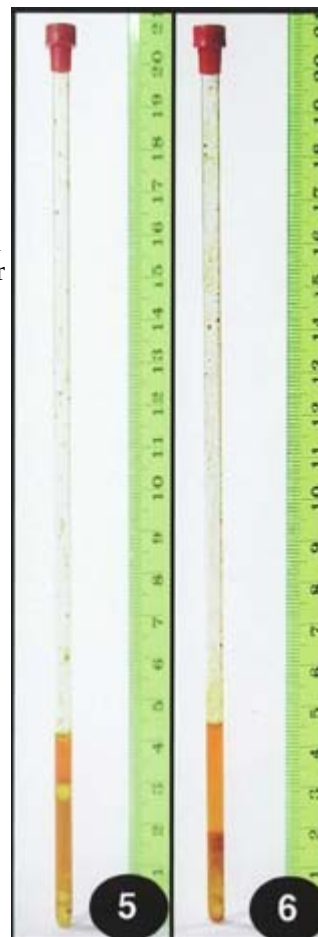


Figure 7

This is a comparison of a properly prepared sample solution in an NMR tube that is too short due to a broken end covered by the cap. The short sample either will not be detected by the robot or, worse, the robot may pick it up and drop it. There will be no data in the student's account. If it is dropped it will break samples submitted by other students and they will not have data. The short sample tube is not suitable for NMR.

Figure 8

This is a broken NMR tube. It will be too short for the robot to handle properly. It either will not be detected by the robot or, worse, the robot may pick it up and drop it. There will be no data in the student's account. If it is dropped, it will break samples submitted by other students and they will not have data. Discard any broken tube. It is not suitable for NMR.

