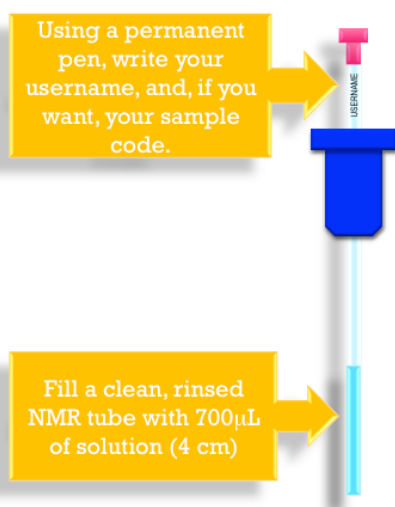


Sample preparation

- Clean your tube with acetone or water and rinse it with the appropriate solvent.
- Do not dry your tube in ovens: this will bend the tube. Bent tubes can severely damage the probe.
- Dissolve your sample in deuterated solvent to an appropriate concentration (see below).
- Filter your sample through glass wool to remove any particles.
- Fill a clean, rinsed NMR tube with 700 μL of solution (4 cm).
- Using a permanent pen, write your username and if you want your sample code on the top part of the NMR tube.



NMR tubes

All our spectrometers are using 5 mm NMR tubes for all our spectrometers. Tubes should not be shorter than 15 cm. They should have no cracks or scratches and be free of dirt on the outside too.

We recommend New Era tubes.

Solvent

Choice of the solvent depends on the solubility of your sample, chemical shift of the residual protons in ^1H NMR and position of signals in ^{13}C NMR (position of the solvent peaks can overlap with signals from your compound), chemical (solvent should be inert towards your compound) and physical (b.p., m.p., viscosity need to be considered while doing VT NMR experiments) properties of the solvent.

Concentration

For ^1H spectra, for small molecules, use 5 to 25 mg/ml. A dilute solution will give better resolution due to decreased viscosity.

For larger molecules, such as polymers, a higher concentration may be used.

Remember that a clear solution will give a better signal than a turbid solution.

For ^{13}C NMR, keeping in mind that ^{13}C is 6000 times less sensitive than ^1H , the higher the concentration the better. If possible, sample should be close to saturation (the experiment will take no time). However, it's not always possible to get high concentration. The length of the experiment will be dramatically affected as more scans will be required to get a good signal. In those cases, remember that signal to noise is proportional to \sqrt{n} , where n is the number of scans. Therefore, if your concentration is 2 mg/ml, you will need 100 times more scans that if your concentration was 20 mg/ml!