Magritek Table-Top NMR Calibration/Maintenance

Rochester Institute of Technology

Department of Chemistry and Material Science

SOP prepared by Robert Winter on March 14th, 2019

Revision Number: 1

Date of Implementation:

Last Reviewed Date: 3/14/19

I. Purpose:

To promote the effective use of the Magritek Table-Top NMR as well as establishing an instrumental method.

II. Scope:

This SOP is intended for in-group use by trained and certified personnel in the Chemistry Department

III. Prerequisites:

The experimenter must be trained in proper instrument techniques before using this SOP.

IV. Responsibilities

The responsibility for this instrument lies with Tom Allston
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V. Start-Up Procedure:

1. Check to see if the green light on the front of the instrument is illuminated, this indicates that the instrument is on and warmed up. If not, use the power switch located on the back of the instrument, next to the power cord to turn on (instrument must also warm up for approximately one hour before use!).

2. Loading your sample:

Note: For calibration/shimming, use a 10% water in D_2O sample!

a. Remove the sample holder from the top of the instrument and pull your sample tube through the top until you feel resistance (it is also a good idea to clean the tube to remove any fingerprints after putting in the sample holder).
b. Check that the depth is proper using the stand on the right side of the instrument (the black ring should be about centered in the sample and the tube should almost reach the bottom of the stand.
c. Once checked, place the sample and holder back into the instrument.

VI. Operation:

1. Once the instrument is ready to use, open the "Spinsolve-All Users" software on the computer desktop.
2. Select the ^{1}H icon along the top of the program window to run a proton experiment.
    a. The top will change to display the different proton experiments that can be run. For just a basic experiment, select the option for "Proton".

3. The window will change to display parameters that must be input to properly run an experiment.
    a. Change the solvent to whatever is being used for the particular sample (assume all solvent names are the deuterated version).
    b. Provide a name for the sample
    c. Select whether you want to run a "Quickscan", "Standardscan", or a "Powerscan" (these names correspond to the acquisition time for the experiment).
    d. When ready, select the green "Start" button to begin acquisition (data is automatically saved, the file path is displayed over the acquired spectra).

4. The spectrum comes already phased and displays the chemical shift value over the peaks.

VII. Shut Down Procedure:

1. Once finished acquiring data, close out of the "Spinsolve" software and log off of the computer, you may leave the NMR on.

2. Remove your sample from the holder by pushing the sample back through the top and place the holder back into the top of the instrument.