Variable Temperature

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DO NOT attempt VT work until you have spoken to Anne.

Kepler (500) VT range: Ambient to 70ºC **Tardis (300)** VT range: -100ºC to 100ºC

Please note that low temperature VT is not yet available on the 300

Make sure you are using the correct spinner and you are not exceeding the boiling temperature of your solvent.

Blue (POM) 0ºC to 80ºC **Translucent (Kel-F)** -40ºC to 120ºC **Ceramic** -150ºC to 150ºC

1. Remember to lock, tune and shim. Take a spectrum at ambient temperature.

2. Open the **edte** window. Set the probe gas to 400-600lph. Set your target temperature up in 10ºC intervals and use the monitoring tab to make sure everything looks ok. **Any spikes or jumps in power or temperature, TURN OFF THE VT IMMEDIATELY.**

3. Once at your final temperature, wait at least 5 minutes for your sample to equilibrate. Remember to lock, tune, and shim AFTER the 5 minutes.

4. Once finished, return the probe to ambient temperature. Make sure the probe is safely back to ambient temperature before you log out and leave the NMR Facility. Plan your reservation time accordingly.

5. It is HIGHLY recommended that once the probe is at your desired temperature, you use a temperature calibration standard to measure the probe's actual temperature. Wait 5 minutes for the standard to equilibrate, then lock/tune/shim, and collect a ^{1}H spectrum. Use the **calctemp** command to measure the temperature. Ask Anne for the appropriate standard based on the temperature range. The 80% glycol in DMSO standard works best for a range of 27ºC to 106ºC.

6. When shimming on the 500, remember to use the command **topshim convcomp**.

7. REMMEBER TO BE PATIENT. VT experiments take time.

8. **NEVER** leave the instrument unsupervised during a VT experiment. You must be present and monitoring the progress in case something goes wrong.