

## Safety and protocol training for liquid nitrogen filling of the NMR's

- 1) Prop open the NMR room doors and keep them open the entire time of filling the magnet. During the filling a large amount of gas phase nitrogen is generated and in a closed room suffocation is possible. *Initial:*\_\_\_\_\_
- 2) Move the liquid nitrogen tank into the NMR room. *Initial:*\_\_\_\_\_
- 3) Put on gloves and goggles and keep them on when handling the transfer hose with the liquid nitrogen tank valve open. Liquid nitrogen is very cold and contact will cause tissue damage. *Initial:*\_\_\_\_\_
- 4) Keep all tools/metal objects away from the magnet (greater than 6 feet). The NMR's are extremely powerful magnets, which can cause metals objects to become dangerous around the magnet. *Initial:*\_\_\_\_\_
- 5) Attach the stainless steel transfer line to the **blue** liquid outlet of the liquid nitrogen tank, use a crescent wrench and make sure the transfer line is securely attached to the tank's liquid outlet. *Initial:*\_\_\_\_\_
- 6) Remove two fill port caps from the magnet. *Initial:*\_\_\_\_\_
- 7) Attach the clear plastic tubing to the Nitrogen exhaust port, pointing it away from the magnet. *Initial:*\_\_\_\_\_
- 8) Open the **blue** liquid nitrogen knob on the liquid nitrogen tank and wait for liquid nitrogen to come out of the stainless steel transfer line. *Initial:*\_\_\_\_\_
- 9) Put the stainless steel transfer line onto the fill ports of the magnet that does not have the plastic tubing. *Initial:*\_\_\_\_\_
- 10) Now **wait** in the NMR room until the liquid nitrogen comes out of the other fill port, the one that does not have the stainless steel transfer line on it but the clear plastic tubing. *Initial:*\_\_\_\_\_
- 11) Turn off the flow of liquid nitrogen by turning the blue knob on the liquid nitrogen tank. *Initial:*\_\_\_\_\_
- 12) Replace the both fill port caps on the magnet. It is very important to replace the caps, without the caps ice will build up on the fill ports creating a pressure hazard. *Initial:*\_\_\_\_\_
- 13) When finished filling all the magnets return the liquid nitrogen tank back to the stockroom area. *Initial:*\_\_\_\_\_
- 14) In the case of a building emergency. Quickly turn off the flow of liquid nitrogen and then exit the building. *Initial:*\_\_\_\_\_
- 15) During a nitrogen fill **do not** leave the room until you're finished, unless there is a building emergency. *Initial:*\_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_