



Vitrobot Mark IV plunge freezer. NCCAT specific procedures.

Safety

General Precautions:

- Use the Personal Protective Equipment (PPE) provided by NCCAT. Nitrile gloves, goggles (or eyeglasses), and additionally cryo-gloves and a face shield while dispensing LN₂ and a face shield while dispensing ethane.
- The dehumidified room is equipped with an oxygen monitor. If the monitor alarm sounds, you **MUST** stop working, leave the room and leave the door propped open for air replacement. You must wait until air has recirculated and the alarm turns off before reentering the room (this generally takes only a minute or two).
 - If you continue working in the room while the alarm is sounding, you will lose access to the lab.
- Inspect equipment and accessories for weaknesses, cracks or damage before beginning work. If you suspect any damage, or encounter any problems during use, please fix immediately and ask for help from staff if needed.
- Report all accidents, no matter how minor.

Liquid Nitrogen:

- Ask for assistance to fill 4 L LN₂ dewars from the large tanks. Use cryo-gloves for LN₂ tank operation.
- Do not discard of LN₂ on the floor. Empty any used nitrogen into LD10 collection dewars.
- Be careful with any metal or tweezers in vacuum sealed dewars. If a dewar breaks, the release of vacuum can cause glass to shatter around the room.

Waste disposal

- Do not dispose of any chemicals or liquid cryogens down a sink drain. Liquid hazardous waste collection is in the SEMC fume hood. Pipette tips and other dry waste goes into red biohazard bags on the bench top or in metal bins under the bench. Gloves and masks must be disposed of in the hazardous waste collection.

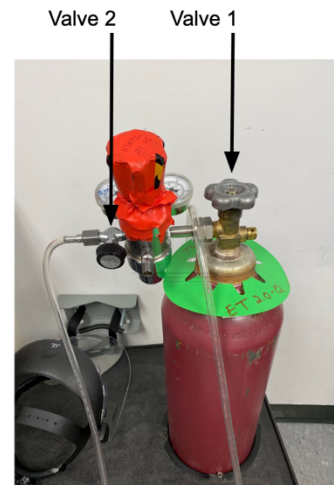
Mandatory PPE





Setup

- The distilled water for the humidifier is kept in a 1 L bottle in the DH room.
- The Foam freezing station is kept in the SEMC lab fume hood. All other tools are in the drawers under the Vitrobot.
- The ethane tank is opened using two valves. Do not turn the valve covered in red tape and labeled “Do not touch”. (See picture)
- When attaching/detaching the humidifier, make sure the wire is not coiled. Wire should be straight and able to fit into the opening at the base of Vitrobot. Do not unplug the wire to the humidifier.



Shutdown

- Place ethane holder with any remaining ethane and nitrogen in the marked bin inside the SEMC lab fume hood to evaporate and dry.
- Close both ethane tank valves (see figure)
- Leave the humidifier plug attached. After emptying the water from the humidifier, store with the O-ring upside down in the small ice bucket to the left of Vitrobot (see figure).
- Clean Vitrobot tweezers with water and ethanol and return to their box in the drawer.
- Empty the LD4 of any unused nitrogen into the LD10 collection dewar and invert on the rack to dry.
- Return all tools into the drawers and leave the bench top empty and clean.
- Leave the humidity chamber door open.

