

How to fill Nitrogen Dewar and the Nitrogen trap in the Big Lab

Frequency : Once a week for the Dewar - Nitrogen transfer

Frequency : Every third week for the Dewar filling

1. CONNECT the transfer tube to the Nitrogen Dewar
2. Gently OPEN the over pressure valve (fully)
3. OPEN (less than 45 degrees) the transfer valve
4. WAIT for 10 minutes (so that the tubes can cool)
5. WATCH the pressure. It should be fluctuating, but should not be more than 400 mbar and oscillate around 200 mbar
6. WAIT till overpressure valve vomits liquid
7. WAIT for the level to rise
8. Once the dewar is full, CLOSE the transmission tube.
9. CLOSE transfer valve on the dewar
10. OPEN safety liquid valve (this removes the liquid from the tubes. If liquid nitrogen is trapped in the tube, it will expand when heating up and break the tube).
11. DEFREEZE the brass
12. MAKE SURE that the safety valve is open, to be sure there is no pressure in the pipe that could cause an accident when removing the transfer tube in the Dewar
13. REMOVE the transfer tube in the DEWAR (unscrew)
14. After some time, CLOSE the safety valve
15. MOVE the Dewar to the big lab
16. SCREW the brass valve
17. CONNECT the transparent tube
18. REMOVE the scotched plug. This is a safety measure, intended to prevent a pressure development in the trap Dewar during the transfer
19. If the Dewar was not at rest overnight, OPEN the overpressure valve to increase the pressure in the dewar (necessary for the transfer to happen)

20. If opened, CLOSE the overpressure valve once the pressure reaches 400 mbar
21. OPEN the transfer valve
22. HOLD the tube in a somewhat regular form until it freezes
23. If needed OPEN and CLOSE regularly the overpressure valve so that the transfer goes on
24. MONITOR the volume thanks to light in the Dewar
25. When full, Nitrogen will spread out, then CLOSE the transfer valve