

## Instructions for Using the Tousimis Critical Point Dryer

1. Turn “ON” the power. Wait 3 minutes for valve heaters to equilibrate. While waiting, make sure ALL metering valves are closed.
2. Open the main valve on the CO<sub>2</sub> tank. Make a note of the starting weight.
3. Loosen the knurl nuts on the sample chamber and remove the top. Add 15-20 mL of 100% EtOH to the chamber (enough to cover the top of the basket). Quickly transfer the sample into the chamber and replace the lid. Hand-tighten the nuts.
4. Open the “Cool” valve to the 0.25-0.35 position (try the smaller value first). The chamber will cool to less than 0° in less than a minute. There will be a noise while cooling occurs – don’t worry about it. Once at 0°, then close the Cool valve.
  - *if the temperature exceeds 10°C during the flushing phase, then open the “Cool” valve again for a few minutes.*
5. Open the Fill valve to the 0.35 position. Keep it open. You will be able to see the CO<sub>2</sub> mixing with the Ethanol.
6. Slowly open the “Purge/Vent” valve to 0.11. **Make sure** you have the purge exhaust tube ending in the plastic Erlenmeyer flask because liquid will drip out. Allow this to run for 8 minutes. If the temperature goes above 10°C during the flush, Cool the chamber back to zero.
  - *if you start to get freezing on the lines, this is normal. However, you can reduce the value on the purge/vent meter – making sure that you continue to see flow and that the chamber fluid level remains above the sample.*
7. After 8 minutes, close the “Purge/Vent” valve. Make sure that the chamber is full, then close the Fill valve.
8. Turn ON the “Heat” switch. It will take 5-10 minutes for the system to reach 31°C. During this time, the pressure may reach 1350psi. If it does, an automatic bleed will occur to reduce the pressure. When the temperature passes 31°C, the light on the switch will flip OFF. This is normal. The system will keep the temperature above 31. Do not flip the switch off during this time.
9. Once the system has reached 31°C and over 1072 psi, wait for 4 minutes.
10. Open the “Bleed” valve to the 0.08 position. The pressure will slowly drop until it gets to 400 psi. At 400 psi, close the Bleed valve.
11. Open the “purge/vent” valve to the 0.11 position until the pressure reaches zero.
12. Close the main valve on the CO<sub>2</sub> tank. Remove the sample. Replace the lid. Open all valves to allow them to drain and then close them all. Note the weight of the CO<sub>2</sub> tank; it should be about 1-2 lbs less than at the start.

13. Turn the “heat” OFF and the power OFF.