Critical Point Dryer (CPD) Samdri - 795
Operating Instructions

1. Important: Do not adjust the Cool, Fill, Bleed, or Purge/Vent valve meters! They are set to optimal values already.

2. Before you start, check the CO₂ tank weight on the scale-display near the CPD. If it reads 25 lbs less than the starting weight of the CO₂ tank (see label on the CO₂ tank), a fresh CO₂ tank (99.8% purity) with a siphon tube should be installed. Be careful, there might be pressure in the tube that connects the CO₂ tank to the CPD! Make sure the main valve of the CO₂ tank is closed, then, very carefully open the nut that connects the tube to the CO₂ tank. Release the pressure entirely before you untighten the nut completely.

3. Log into FOM, and then switch on the device – the power switch is on the right side panel.

4. Wait for 3 minutes.

5. Open the specimen chamber by removing the 3 Knurl Nuts and the chamber lid.

6. Fill the specimen chamber with sufficient ethanol to make sure that your sample will be submerged. If you have a sample that easily disintegrates, use porous sample capsules to make sure that no small pieces can clog the valves or tubes of the device.

7. Transfer your samples rapidly into the specimen chamber – do not let the samples dry during transfer!

8. Make sure that the O-Ring that forms the seal between the specimen chamber and the chamber lid is clean and dry. If you spilled ethanol, wipe it off from the O-Ring with a paper tissue. If the O-Ring is not clean and dry, your run will fail!

9. Place the chamber lid on the specimen chamber and hand-tighten the Knurl Nuts – do not use any tools! You will damage the threads.

10. Set the PURGE TIMER – each unit adds 5 minutes of purge time – usually 5 to 10 minutes (between numbers 1 and 2) is the correct setting.

11. Open the main valve of the CO₂ tank.
12. Press the COOL button. When the chamber temperature has dropped to 0° +/- 5° C, the cooling will automatically stop. **When the chamber is not cooling down rapidly, the CO₂ tank is empty and needs to be replaced.**

13. Press the FILL switch. After 2 minutes, the CPD will switch automatically to PURGE mode.

14. The CPD will remain in PURGE mode for the time preset with the PURGE TIMER (should be 5 to 10 minutes).

15. After purge is complete, the CPD will switch automatically to HEAT mode. The temperature and pressure in the specimen chamber will be kept automatically above 31°C (critical temperature of CO₂) and above 1072 psi (critical pressure of CO₂).

16. Close the main valve of the CO₂ tank.

17. When the temperature and the pressure in the specimen chamber are stable above the critical point values for CO₂ (31°C and 1072 psi), wait for 4 minutes, then press the BLEED switch. The pressure will be slowly released during several minutes.

18. When the pressure is at 0 psi, the specimen chamber can be opened. The Knurl Nuts can be opened by hand, once the pressure is released!

19. Take your sample out of the chamber.

20. Make sure that the main valve of the CO₂ tank is closed.

21. CLEAN UP.

In case of issues with the CPD, contact: Eric W. Roth 7-4164, or  
Reiner Bleher, 7-3540

Last modified by Dr. Reiner Bleher, July 2013