

Rotovap Startup

1. Turn on the chiller 5-10 minutes prior to evaporation.
 - 5 minutes = 0 °C
 - 10 minutes = -20 °C
 - You must wait at least 5 minutes, or uncondensed vapors will enter the pump.
2. Turn on the water bath.
 - Set temperature to 40 °C
 - Higher for high boiling solvents
3. Secure your flask with plastic Keck clamps.
 - Do not rely on the vacuum to hold your flask.
4. Turn on the rotary spinner.
5. Turn on vacuum pump.
6. Close pressure valve on condenser unit.
 - Vacuum gauge should begin to rise and max out at >760 mm Hg.
 - If vacuum gauge maxes out at << 760 mm Hg, you have a leak – fix it!
7. Lower unit into water bath.

Rotovap Shutdown

1. Raise unit out of water bath.
2. Open pressure valve on condenser unit.
3. Turn off vacuum pump.
 - Always vent to atmospheric pressure before turning off vacuum pump!
 - This is the same for any vacuum system.
4. Turn off rotary spinner.
5. Remove flask.
6. Turn off water bath and chiller unless you plan to use again in the near future.

Rotovap Tips

- A. To avoid "bumping":
 - Do not fill your flask > ½ full.
 - Faster spin rate usually helps.
 - Use a moderate bath temp – too high will cause excessively fast evaporation.
- B. Once you have removed the majority of solvent, empty the collection flask!
 - If you want to thoroughly dry the sample, reattach and continue rotovapping.
- C. Pay attention to the bump trap as you lower the unit.
 - Make sure you do not press the trap against the water bath – SNAP!
- D. Do not use round bottom flasks with visible cracks or star-cracks – IMPLOSION!

Rotovap Rules/Common Courtesy

Habitual failure to follow these rules will result in your expulsion from the group!

- A.** If your solution bumps into the bump trap, or beyond:
- YOU MUST IMMEDIATELY CLEAN EVERYTHING YOURSELF!
 - This means all affected components, which may include:
 - the bump trap
 - any step-down connectors
 - the steam tube
 - the condenser
 - the collection flask } only if the bumped solution reached this far
 - Do not continue to use the rotovap after it has bumped, or you risk fusing the ground-glass joints together with your dried product.
- B.** When you are done, empty the collection flask!
- The collection flask must be emptied, no matter how little solvent is present.
 - Organic solvents left in the collection flask will, with time, degrade the rubber gaskets present in the rotary mechanism.
 - This will result in leaks, poor vacuum, and an inoperable rotovap.
- C.** Do not continually pump on a collection flask which contains solvent.
- This negatively affects the amount of vacuum you can pull.
 - The collection flask solvent vapors will eventually be sucked into the pump – BAD!
- D.** Turn off the chiller and the water bath when you are done.
- An unattended water bath will evaporate to dryness.
 - This will result in a possible fire hazard.
 - This may also result in a broken heating element.
- E.** Fill the water bath with clean, deionized water only.
- This will minimize hard-water scale buildup.
 - If the water is scummy, change it.
 - If you drop your flask in the bath, you'll thank yourself for keeping it clean.
- F.** Do not monopolize the rotovap.
- If others are waiting, be courteous and mindful of your use.
- G.** Do not abuse the rotovap!
- It is an expensive and semi-fragile piece of equipment.
 - Use common sense and follow the procedures and the rules.
- H.** Leave the rotovap as you found it; CLEAN and IN WORKING CONDITION!