



UNDER THE MICROSCOPE

The Dartmouth College laboratory safety newsletter

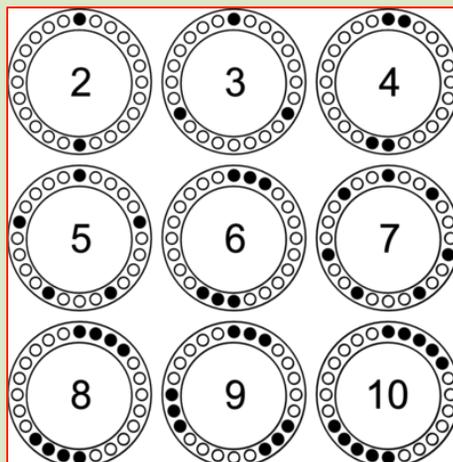
Contact EHS for specific questions,
646-1762 or e-mail ehs@dartmouth.edu



Centrifuge Safety

Before you begin

- ✦ Get training on proper use of centrifuge
- ✦ Use only compatible rotors
- ✦ Check expiration date for centrifuge rotors
- ✦ Retire rotors once they reach their year or run limit
- ✦ Check tubes, bottles and rotors for cracks or imperfections
- ✦ Rotor, tubes and spindle must be clean and dry
- ✦ Examine o-rings and replace if needed
- ✦ Wear proper gloves and do not overfill tubes (3/4 fill max)
- ✦ Balance buckets, tubes and rotors (see balance diagrams)
- ✦ Seat rotor correctly, close and secure lid
- ✦ If using swinging buckets, ensure they are hooked correctly and move freely
- ✦ Ensure tubes are capped

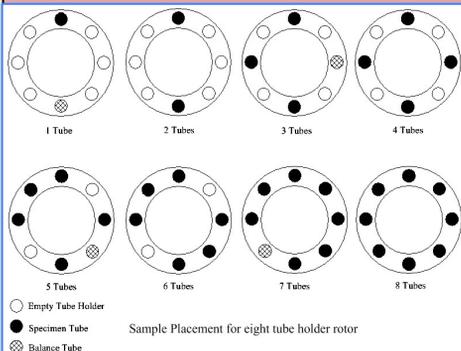


BALANCING



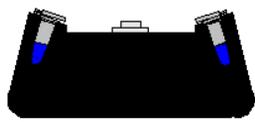
During operation

- ① Keep the lid closed
- ② Do not exceed safe rotor speed
- ③ Operator must stay with centrifuge until at full operating speed and running smoothly
- ④ Stop the centrifuge immediately if there is unusual noise or vibration. Check the load balance.

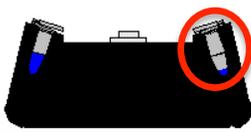


After use

- 🧤 Rotor must be stopped before opening lid
- 🧤 Wear gloves when removing rotor/samples
- 🧤 Check inside centrifuge for any spills
- 🧤 Wash hands after removing gloves
- 🧤 Log centrifuge rotor use



✓ Tubes are balanced



✗ Tubes are not balanced

Infectious materials or human samples (BSL-2)

- ☠ Centrifuge needs to be labeled with a biohazard sticker
- ☠ Wear gloves when handling tubes or rotors
- ☠ Avoid using celluloid tubes with biohazards
- ☠ Use sealed safety cups, safety buckets or sealed rotors
- ☠ Work within a biological safety cabinet when filling tubes, loading tubes in rotors and opening tubes
- ☠ Wipe down exterior of tubes or bottles with disinfectant prior to loading into rotor or bucket
- ☠ Wait 10 minutes after a run to allow aerosols to settle before opening the centrifuge. Check for evidence of any leaks
- ☠ Decontaminate interior of centrifuge with disinfectant after use



Spills inside the centrifuge

Aerosol exposure is a serious concern if breakage or spillage occurs in a centrifuge. If the primary container has broken without a closed rotor or bucket, immediately suspend use, notify lab staff and PI then contact the Biological Safety Officer (BSO) for assistance.

For suspected or confirmed spills, wait at least 30 minutes after centrifuge has stopped to start clean up.

1. Put on a lab coat, gloves and face shield. Open carefully to assess.
2. If spill is contained in a closed cup, bucket or rotor, spray exterior with disinfectant and allow 20 minutes contact time. Transfer the carrier to a BSC. If no BSC is available, close the centrifuge, post a spill warning sign and notify PI and BSO.
3. Gather supplies (sharps container, bin filled with disinfectant, etc.) and place in BSC. Use forceps to pick up glass. Place any unbroken tubes in disinfectant for 20 minutes. Wipe carrier with disinfectant.
4. After disinfection, wash carrier, bucket or rotor with soap and water.
5. Spray interior of centrifuge with disinfectant, let sit for 20 minutes and wipe down.
6. Dispose of clean up materials in orange autoclave bags. (Sharps go in red sharps container)
7. Remove PPE and wash hands.

If the spill is too large to handle comfortably, contact EHS for assistance 646-1762.

EHS main page: <http://www.dartmouth.edu/~ehs/>

OSHA Fact Sheet on Centrifuges: <https://www.osha.gov/Publications/laboratory/OSHAquickfacts-lab-safety-centrifuges.pdf>

EHS Staff

Maureen, Michael, Katrina, Sandy, Ryan, Jeff, Caitlyn, Molly, Jason