|  |  |
| --- | --- |
| Standard Operating Procedure for:**Using balances** | PPE required: |
| All balances should be kept scrupulously clean. To aid this only transfer materials to the weigh boat (or other receptacle) outside the balance and then transfer the weigh boat to the balance. Materials should be handled with appropriate utensils (e.g., spatulas, tweezers, single use pipettes etc.) not with your gloved hands.To keep the balance accurate NEVER drop items on the balance pan directly. If you spill chemicals inside the balance enclosure clean them up immediately. Do not move balances when they are on. Hot objects should not be weighed - allow them to cool to room temperature first. All objects and materials that have recently been removed from a desiccator will absorb moisture and thereby gain weight. It is therefore good practice to record weights over identical time intervals. |
| **Checking balance calibration**Before using a balance it is a good idea to check the calibration with a check weight. These are stored in the technicians office,1. Check the balance is level using the spirit level. If the bubble is not in the centre adjust (normally by twisting the feet) until the bubble is in the centre of the inner circle.
2. Check that the balance is on and that the door is closed. Press the “Tare” button and wait 5-10 secs for a '\*' or similar symbol to appear in the upper left/right hand corner of the display, and the mass to read 0.000*x* g.
3. Open the door and CAREFULLY take the check weight out of the box USING A PAIR OF TWEEZERS – never fingers. Place check weight in centre of the balance pan.
4. Close the door and wait for the digital readout to stabilize ('\*').
5. This should read exactly the value of the check weights mass. If not repeat this procedure and if it is still not working contact a technician.
6. Put the check weight back in its box USING A PAIR OF TWEEZERS.

**Measuring mass**1. Repeat steps 1 and 2 detailed above.
2. Open the door and place a weigh boat or other container on the centre of the balance pan.
3. Close the door and wait for the digital readout to stabilize ('\*').
4. If you do not wish to include container mass in your measurement then press “TARE” to reset the mass to zero (see Step 2 above),
5. Remove the container from the balance and add the substance to be weighed (NEVER ADD SUBSTANCE ON BALANCE PAN).
6. Return container to balance and wait 5-10 secs (may take up to a minute) for the mass reading to settle.
7. If the mass reading is unstable it may be due to static electricity build up. You can try using an anti-static fan which will blow ions to reduce the static charge. Hold the object or sample in the ion stream and then place back on the balance pan **being very careful not to blow powders around**.
8. Clean the balance by dusting off the stage and surrounding area and then gently wipe down the balance, glass panels, and counter top around the balance. Make sure the balance and the surrounding area is free of ALL crystals, powders, and other debris.
 | **Hazard symbols:**See individual experiment risk assessments and MSDS. |
| **Significant hazards:**See above |
| **Hazard phrases (H):**See above |
| **Can it be done out of hours?**Balances can be used out of hours **unless individual experimental risks do not allow.** |
| **This SOP is not relevant in the following circumstances:**1. SOP does not cover specific experimental risk these must be covered by user’s assessments
2. Any other situation where the procedure may result in harm to yourself or others.
 |