

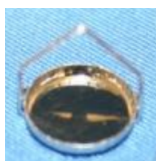
## TGA-5500

### RULES:

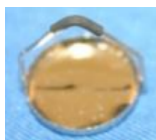
- Handle pans with extreme care. Imagine they are precious jewelry. They are expensive and delicate.
- Do not manually move samples on or off the hangdown wire
- Use the correct pan for the temperature range of your experiment. Using an incorrect pan can cause damage to the instrument
- Do not reduce the gas flow below 25 mL/min

### SOP:

1. Log in on FOM.
  - a. The monitor is interlocked through FOM
  - b. The control PC for the TGA also controls the DSC. This can sometimes present issues with the interlock. If you have any issues with the interlock (monitor turns off), log out on FOM and then log back in.
2. The control software is TRIOS. Normally TRIOS is already running. Make sure are using the instance of TRIOS that is connected to the TGA (the window title for the TGA says 5500, the other instance of TRIOS says DSC).
3. Select the pans that you will use for your experiment. Choose the cleanest, least bent pans.
  - a. There are three types of pans that we have in stock for the TGA, each having a different temperature range
    - i. Platinum 100 uL ( $\leq 750^{\circ}\text{C}$ )



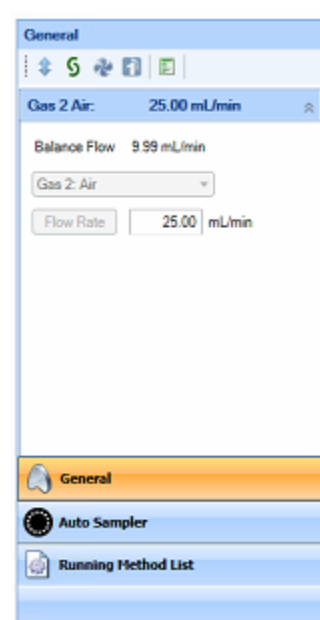
- ii. Platinum HT ( $\leq 1000^{\circ}\text{C}$ )



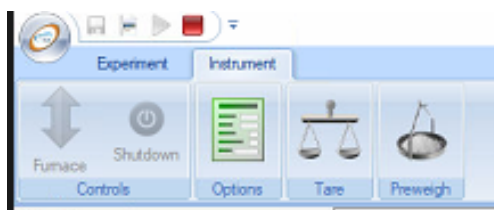
- iii. Alumina ( $\leq 1200^{\circ}\text{C}$ , max instrument temperature)



4. Clean the pans.
  - a. Start by removing any loose material from the pan. You can carefully blow the pan using a spray duster while holding it firmly with tweezers.



- b. Burn the pan using the propane torch
  - c. flake/blow off any remaining solid material
5. Select the gas that you want to use for the experiment. This is done on the “General” tab on the right side of TRIOS
  - a. Gas 1 is Nitrogen, Gas 2 is Air
  - b. Do not change the flow rate from 25 mL/min
6. Tare the pans
  - a. Load the pans onto the autosampler
  - b. Click on the “Tare” button on the instrument tab (top left in TRIOS)



- c. Select the pan positions that need to be tared and press start.
7. Once the taring is complete, remove the pans from the autosampler and load your material into the pan. The ideal mass is 10-20 mg, though for low density materials like fibers this may not be possible.
8. Write your recipe by selecting any run that is open in “Design View” (on the left in TRIOS)
  - a. Fill out the form line by line, including the procedure
  - b. Advanced options:
    - i. “Start Experiment After Weight stabilization”
      1. Use this by default, but do not use this for samples containing volatile phases, as the sample will start losing weight as soon as it is loaded, and therefore the experiment won’t start because the weight isn’t stable
    - ii. “Enable Air Cool”
      1. Use this by default. When this is checked it opens the furnace as soon as the experiment is done, and the furnace cools much faster. Don’t use this if you don’t want your samples exposed to air when they are hot.
9. Once you have written your run in “Design View”, right click on the run and select “copy to running queue”.
10. Adjust the run in design view as needed for the next sample, and then copy that run to the running queue as well.
11. Once you have your entire list of runs in the running queue, start the experiment by pressing the “Play” button
12. Once the process starts, TRIOS will automatically jump to the results tab.

