

Operation Procedure for ASH1 Emitech K-1050X Plasma Asher

Start Up

1. Turn on asher via the power switch (located on the rear of the tool in the upper corner) if it is not already powered on.

Operation

1. Open the chamber by pulling on the front handle
2. Load the sample to be processed onto the metal process tray
3. Close the door completely
4. Press “**Enter**” to edit the recipe and scroll through the recipe parameters
 - a. Change the values as needed for processing by pressing the “up” and “down” arrow buttons
 - b. Power: set up to 100W max
 - c. Man/Auto power control set to 1
 - d. Ashing Time: set as needed using arrows and “**Enter**” to change HH:MM:SS
 - e. Bleed Delay Time: the number x10 seconds is the time for gas to bleed into the chamber before the plasma strikes. Typical value = 5 (which = 50 sec)
 - f. Process Gas: Gas 1 (Oxygen). Gas 2 is Argon, but typically Oxygen is used.
 - g. Vent Valve: Gas1 or Restricted (default value that gives a slower vent)
 - h. Turbo Pump Enabled set to 0 as there is no turbo pump
 - i. Press “**Enter**” to save all values
5. After the recipe has been edited and saved press “**Start**” and listen for the pump to turn on for the process to begin
6. Set the gas flow on the #1 flowmeter to the appropriate gas flow to achieve the desired process pressure (typically set at about 5-7 on the scale to achieve a pressure of 6×10^{-1} mbar)
7. Look for the plasma to glow once the process begins (it may be very faint)
8. The process will end automatically and the chamber will vent automatically at the end
9. Open the door when vented, remove samples and close the door
10. To terminate a process early press “**Stop**”
11. To change the power during a cycle press the up and down buttons while watching the front power display
12. **Caution:** *the chamber and substrates will be HOT after the process (up to 60 °C)*

Rough Process Guidelines:

Light Surface Ashing: O2 flow to give 6×10^{-1} mbar, 50 Watts

Medium Ashing: O2 flow to give 6×10^{-1} mbar, 75 Watts

Heavy Ashing: O2 flow to give 6×10^{-1} mbar, 100Watts

The 100W process is the recommended process for almost all applications

Shut Down

1. Leave the system powered **on** for the next user (this improves process stability).