Plasma Preen II-862 Operating Instructions

This machine is to be used by authorized personnel only. For training contact:
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Enter all necessary information in the Log Book for each use.

1. Open the microwave oven door.
2. Remove the Pyrex dish (and the perforated metal basket / the cage if present).
3. Place the sample on the base plate in the center of the oven.

NOTE: It is recommended that you place your sample on a clean glass plate and then place the glass plate on the base plate for better cleaning.

4. Cover your sample with the Pyrex dish and verify that the dish is in contact with the orange seal on the bottom of the chamber assembly.

NOTE: You can cover your sample with the perforated metal basket if it's sensitive to electrostatic charging. The basket will only allow non-charged chemically reactive oxygen species through, grounding all others.

5. Close the microwave door.
6. The next 3 steps are made using the controller box next to the microwave:
    1. Turn ON the vacuum switch and watch the vacuum gauge pump down below 25 inches of mercury. Wait another 30 seconds before proceeding.
    2. Turn ON the gas control switch and check the gas flow meter to the left. The flow should be set at approximately 3 SCFH. Wait around 60 seconds before proceeding.
    3. Turn ON the power switch.
7. Set the time you wish the asher to run by pressing a number on the microwave number pad. If #1 is pressed the asher will start and run for 1 minute, time out and turn off…#2 = 2 minute etc. The plasma glow should be observed through the microwave door, especially with the room lights off. (see Figure 1).
8. When the cycle is complete the asher will time out and turn off.
9. Wait 60 seconds for the process chamber to purge before proceeding.
10. Turn OFF the Power Switch, Gas Control Switch and the Vacuum Switch
11. Open the microwave door and let the Pyrex dish cool down.
12. When the Pyrex is cool enough remove it along with the metal basket and take out the sample.
13. Place Pyrex dish and the metal basket back inside the microwave (see Figure 2).
14. Leave all systems off.

Qual Data:
2" Silicon wafers coated with S1811 and patterned using a checkered mask (blocks of 2mm x 2mm). A profilometer was used to measure block step height before and after clean. (see Figure 3).

Film	Plasma	Process Time (min)	Avg. Amount Removed (Ang)
Photoresist Shipley 1811 (Positive)	O2 (100% Duty Cycle)	2	3100

Figure 1 – Plasma glow during process

Figure 2 - Inside of the microwave

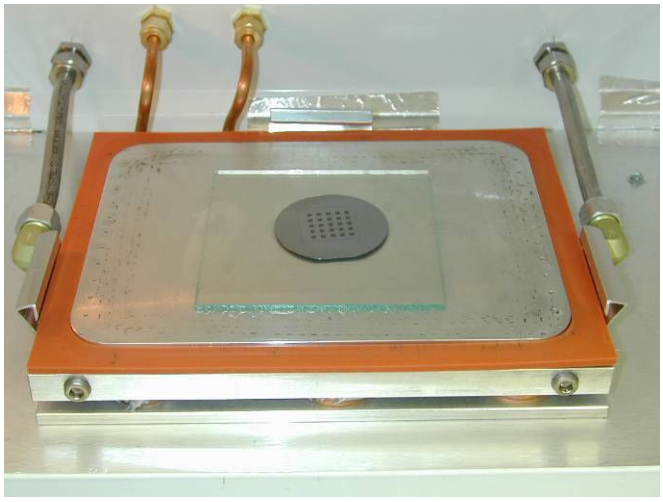

Figure 3 - Ashrate Qual Setup

Revision	Description of change	Change initiator(s)	Date
1	Modify spec to add ashrate data and pics.	Omid Mahdavi Steve Orozco	5-16-07