1 SCOPE

The purpose of this document is to detail the use of the Aura 1000 Asher. All users are expected to have read and understood this document. It is not a substitute for in-person training on the system and is not sufficient to qualify a user on the system. Failure to follow guidelines in this document may result in loss of privileges.

2 REFERENCE DOCUMENTS

- Material Safety Data Sheets for Oxygen and Nitrogen
- Aura 1000 Asher Operations Manual

3 DEFINITIONS

n/a

4 TOOLS AND MATERIALS

4.1 General Description

4.1.1 The Aura 1000 Asher is a fully automated single wafer processing tool that utilizes downstream plasma to remove photoresist. It consists of a single process chamber, a microwave plasma generator, mass flow controlled gas delivery system, roughing pump and pressure control system (throttle valves), an electronics control system and an automated robotic wafer handler. The Asher detects endpoint by monitoring the 430nm optical signal from the plasma. Wafers are processed between 200C and 300C, depending on how long the High Lamps are on.

4.1.2 Wafer Cassettes - The Aura 1000 uses the dedicated 6” black wafer cassettes. Two cassettes are required, one for the sender and one for the receiver.

4.1.3 Carrier Wafers – The Aura 1000 is only set up to handle 6” wafers. Four inch wafers as well as wafer pieces may be processed using carriers wafers.
5 SAFETY PRECAUTIONS

5.1 Personal Safety Hazards

5.1.1 Compressed Gas Hazards - The ashing process uses compressed Oxygen and Nitrogen. These gases are nontoxic but, oxygen will accelerate combustion. Read material safety data sheets (MSDS) and be familiar with hazards and safety controls to prevent an accident, before using the system.

5.1.2 Electrical Hazards - The Asher uses high voltage microwave energy, which can result in burns or electrical shocks. Never operate the tool with the covers off.

5.1.3 Mechanical Hazards - The Asher uses mechanical drives to actuate the door and wafer handling arms. These devices may move quickly and with great force. Do not insert objects (such as tweezers or fingers) into the asher for any reason.

5.2 Hazards to the Tool

5.2.1 Contamination – This tool is used to process materials that represent a contamination hazard to other tools. To prevent cross contamination of other tools, wafers that have been through the Aura 1000 should not be process in any of the wet benches or thermal processes.

5.2.2 Loading - Carefully load cassettes and be careful that no wafers are cross-slotted.

5.2.3 Wafer Size – Only 6” wafers or wafer carriers may be processed on this tool.

6 INSTRUCTIONS

6.1 Operating the system

6.1.1 Swipe into the CARD SWIPE.

6.1.2 In Service Chase 2735 turn on the Oxygen and Nitrogen valves labeled Gasonics.

6.1.3 In Service Chase 2735, at the far end, turn on the Vacuum Pump with the green button. Allow 10 minute warm up before processing.

6.1.4 Verify that the key switch is in AUTO mode.
6.1.5 Verify that the system is on by looking at the Control Panel. It should be in Hibernate mode. Press START to go to IDLE mode.

6.1.6 Place an empty cassette on the receiver (right).

6.1.7 Place the cassette of wafers to be ashed on the sender (left).

6.1.8 To load a new recipe, press the RECIPE NO. button on the keypad, enter in up to 3 recipe numbers and press ENTER. There are a total of 16 recipes, 0-F. Recipe 0 is reserved for service.

6.1.9 Press START to run the tool. The power, pressure and gas flows will be displayed above the corresponding buttons. Use the Display Mode button to toggle between the set point and actual values.

6.1.10 If the system is idle for greater than 5 minutes, it will go into the hibernate mode, evacuate the chamber and flow purge gas. Press START to resume processing with the same recipe.

6.1.11 To pause the system, press the STOP button one time. To resume processing, press the START button.

6.1.12 To abort the system, press the STOP button twice.

6.1.13 When finished with the asher, wait 1 minute for the system to go into Hibernate mode and then turn off the Vacuum Pump using the red button, Oxygen and Nitrogen valves in the service chase.

6.1.14 Remember to Swipe out of the system.

6.2 Errors during Run

6.2.1 If an error message comes up, press START to continue.

7 APPROPRIATE USES OF THE TOOL
This tool is intended for processing wafers that contain gold, copper and III/V materials. Wafers that have been processed in this tool should not be introduced into any wet or thermal process.

8 ATTACHMENTS

8.1 Recipe List

REVISION RECORD

<table>
<thead>
<tr>
<th>Summary of Changes</th>
<th>Originator</th>
<th>Rev/Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Issue</td>
<td>Sean O’Brien</td>
<td>A - 01/18/2010</td>
</tr>
<tr>
<td>Added shut off oxygen and nitrogen valves to step 6.1.13</td>
<td>B. Tolleson</td>
<td>B-10/27/2010</td>
</tr>
<tr>
<td>Added note to allow 10 minute warm up for pumps</td>
<td>B. Tolleson</td>
<td>C-03/17/2016</td>
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