

University of MN, Minnesota Nano Center

Standard Operating Procedure

Equipment Name: Exhausted Blue M oven
Badger Name: oven-4 **Revision Number:** 2
Model: 008A-3-26 **Revisionist:** Paul Kimani
Location: Bay 2 **Date:** October 29, 2013

1. Description

This is an exhausted oven with a controllable N₂ flow gauge. The temperature may be adjusted up to 500°F (260 °C), the N₂ flow rate can be adjusted between 0 - 60 SCFH. There is a center rack for placing substrates.

2. Safety

- a. Maximum temperature is 500°F (260 °C).
- b. Take caution when unloading your hot substrates when the bake time is complete.
- c. Turn the oven power OFF when completed.
- d. Turn off the N₂ flow gauge flip toggle that is connected to the red N₂ gas line when complete.

3. Restrictions/Requirements

- a. No aluminum foil in oven.
- b. Wafers may have material on the surface that could out gas fumes such as photoresist. This oven is exhausted.

4. Required Facilities

- a. Electrical outlet
- b. Nitrogen

5. Definitions

- a. **SCFH:** Standard Cubic Feet per Hour
- b. **PSIG:** Pounds Per Square Inch Gauge

6. Setup

- a. Place substrates in the quartz boats provided.
- b. Users must supply their own method of timing the length of bake.
- c. Turn the **MAIN CONTROL** oven toggle switch to **ON**. This is located on the front panel of the oven.
- d. Turn the black **MEMORY RING DIAL** to the desired temperature. This dial is labeled **CONTROL**.

7. Operating Instructions

- a. Open the door and place substrates in the oven on the rack and close the door.
- b. Turn on the Nitrogen by flipping the toggle switch on the red gas line.
- c. Switch sign to **IN USE DO NOT OPEN**
- d. Set the N₂ flow rate by turning the black dial on the **SCFH AIR** flow meter to the desired PSI.
- e. Check the temperature on the **FARENHEIGHT/CENTIRGRADE** read out and the N₂ flow rate periodically throughout you process.
- f. When the process is complete, turn the N₂ flow to zero and flip the toggle to the OFF position.
- g. Turn the oven **MAIN POWER** switch to **OFF**.

8. Problems/Troubleshooting

- a. If the temperature is not responding to the set parameter, notify staff.

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- b. If no nitrogen is flowing on the N₂ flow gauge after turning it to the desired PSGI, notify staff.