

1. Check Equipment Reservations in Coral to ensure that you reserved the correct machine, in the correct facility, for the correct date. Another user may have reservations; it is your responsibility to honor them, if this is the case.
2. Engage the tool in Coral for the equipment that you are about to use.
3. At the RCA transfer station, place wafers to be cleaned in the RCA standard carrier using a vacuum wand and place the top captured handle on the carrier.
4. Gown up with apron, face shield, arm protectors and acid gloves.
5. Perform pre-check of wet bench
  1. Check the Coral indicator LED in the upper right corner of the control panel. If you engaged the tool it should lit up with the word "ON". If it is blank, you have not engaged Coral.
  2. Be sure red light on the top of the wet bench is not illuminated. If this light is on, or goes on during processing, stop immediately and contact a staff person.

3. Check the Magnehelic on the right side of the control panel. Be sure it is reading greater than 0.1" H<sub>2</sub>O. If is lower than 0.1" H<sub>2</sub>O stop immediately and contact a staff person.
6. Rinse and aspirate manually both the SC1 and SC2 bath.
  1. Using the DI Water sprayer fill the tank being cleaned to the top with DI water.
  2. Place the aspirator hose into the tank being cleaned. Turn the switch labeled "Aspirator" to "On". Once the aspirator has removed all the water from the tank turn the switch labeled "Aspirator" to "Off".
7. Run both SC1 and SC2 dump rinsers by pressing "Start" on each dump rinser controller. Allow them to finish running.
8. Using the DI water sprayer, fill both SC1 and SC2 with DI water to the first mark on the Teflon scale.
9. Turn on the SC1 and SC2 heaters by turning the "SC-1 Heater" and "SC-2 Heater" switches to "ON" and pressing the red "SC-1 Reset" and "SC-2 Reset" buttons. If the light in the red buttons does not go out then your

heaters are interlocked and are not on. Check to be sure you have engaged the tool. If you have call a staff member.

## 10. Process SC1

1. Go to the chemical pass through and using the designated chemical cart bring the ammonium hydroxide ( $\text{NH}_4\text{OH}$ ) and hydrogen peroxide ( $\text{H}_2\text{O}_2$ ) to the RCA bench. Be sure to use partial bottles first before getting a full bottle.
2. When the SC1 bath temperature is  $75\text{-}80^\circ\text{C}$ , add the ammonium hydroxide ( $\text{NH}_4\text{OH}$ ) to the second mark on the Teflon scale, and hydrogen peroxide ( $\text{H}_2\text{O}_2$ ) to the third mark on the Teflon scale.
3. Put the chemicals back in the chemical pass through.
4. Using the top captured handle, place the wafer carrier into SC1.
5. Start the SC1 timer
  1. If the SC1 timer is set for 10 minutes, push the SC1 “Timer Start/Stop” button to start the timer.

2. If the SC1 timer is not set for 10 minutes, be sure it is stopped and press the SC1 “Timer Reset” button. Once the timer is reset for 10 minutes you can push the SC1 “Timer Start/Stop” button to begin the timer.
  6. When the time has expired remove the carrier from SC1 and immediately place it in the SC1 dump rinser. Press “Start” on the dump rinser controller. The dump rinser is automatically set to perform 5 cycles. Allow it to finish all 5 cycles.
11. Process HF
1. Open the lid to the HF tank and place it in the area to the left of the glove rinser.
  2. Using the top captured handle, remove the wafer carrier from the SC1 dump rinser and place the wafer carrier in HF.
  3. Start the HF timer
    1. If the HF timer is set for 1 minute (HF Dip times less than one minute require PTC approval), push the HF “Timer Start/Stop” button to start the timer.

2. If the HF timer is not set for 1 minute, be sure it is stopped and press the HF "Timer Reset" button. Once the timer is reset for 1 minute you can push the HF "Timer Start/Stop" button to begin the timer.
4. When the time has expired, slowly pull the carrier from HF and immediately place it in the SC1 dump rinser. Press "Start" on the dump rinser controller. The dump rinser is automatically set to perform 5 cycles. Allow it to finish all 5 cycles.

## 12. Process SC2

1. Go to the chemical pass through and using the designated chemical cart bring the Hydrochloric Acid (HCl) and hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) to the RCA bench. Be sure to use partial bottles first before getting a full bottle.
2. When the SC2 bath temperature is 75-80°C, add the Hydrochloric Acid (HCl) to the second mark on the Teflon scale, and hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) to the third mark on the Teflon scale.
3. Put the chemicals back in the chemical pass through.

4. Using the top captured handle, remove the wafer carrier from the SC1 dump rinser and place the wafer carrier in SC2.

5. Start the SC2 timer

1. If the SC2 timer is set for 15 minutes, push the SC2 “Timer Start/Stop” button to start the timer.

2. If the SC2 timer is not set for 15 minutes, be sure it is stopped and press the SC2 “Timer Reset button”. Once the timer is reset for 15 minutes you can push the SC2 “Timer Start/Stop” button to begin the timer.

6. When the time has expired remove the carrier from SC2 and immediately place it in the SC2 dump rinser. Press “Start” on the dump rinser controller. The dump rinser is automatically set to perform 5 cycles. Allow it to finish all 5 cycles.

13. Process Spin dryer

1. Using the top captured handle, remove the wafer carrier from the SC2 dump rinser.

2. Transfer from the top captured handle to the side captured handle.
3. Load into the appropriate spin dryer (4" or 6").
4. Run the rinse/dry cycle by pressing the "Start" button.
5. Once the spin dryer is complete your wafers are ready for the next processing step. To go into diffusion, bring the RCA cassette with your wafers over to the furnace transfer table. Do not replace them into your carrier.

#### 14. Cleaning the RCA station

1. Shut off power to both SC1 and SC2 heaters by switching the "SC-1 Heater" and "SC-2 Heater" switches to "Off".
2. Aspirate chemicals out of both SC1 and SC2
  1. Place the aspirator hose into the tank being cleaned. Turn the switch labeled "Aspirator" to "On". Once the aspirator has removed all the chemicals from the tank turn the switch labeled "Aspirator" to "Off".

2. Using the DI Water sprayer fill the tank being cleaned to the top with DI water.
3. Place the aspirator hose into the tank being cleaned. Turn the switch labeled "Aspirator" to "On". Once the aspirator has removed all the water from the tank turn the switch labeled "Aspirator" to "Off".
4. Repeat steps #2 & #3 two more times.
3. Manually rinse the whole top work area with DI water and rinse the rubber gloves.
15. Remove the protective clothing.
16. Disengage in Coral. Be sure to include as much information as possible.