

# KOH & TMAH BENCH OPERATION CASCADE RINSER

## Personal Protective Equipment (PPE)

While working at etch bath you must wear:

1. Face shield or chemical goggles
2. Chemical apron
3. Chemical gloves over the nitrile gloves

**Note: Remove chemical gloves to operate controllers located on top panel.**

## Materials

- Silicon, silicon on insulator, quartz
- **NO METALS, metal tweezers, glass, Ga/As wafers**

## Etch Bath

### Prepare

1. Log onto CRESS to engage etch bath controller.
2. Press **PWR** on the **ETCH BATH** controller.
3. To set the bath temperature:
  - Press **SETUP – 3 times** -- to **PS** for process setpoint.
  - Use **▲▼** keys to set temperature **0.0 to 95.0 degrees C**.
  - Press **SAVE**.
  - Press **RETURN**.
  - Press **HOLD** to start etch bath temperature adjustment.
4. Allow the bath temperature to stabilize at set temperature. Approximately 20 minutes.
5. Insert wafers in the either 3-inch or 4-inch wafer holder. Pieces should be locked in the basket and then the basket placed inside the 3-inch wafer holder.
6. Don all PPE – apron, face shield and chemical gloves – before using the etch bath.
7. **With chemical gloved hand**, lift off the white tank lid and set aside.

### Wet Etching

8. With PPE on, slowly lower holder/basket into KOH or TMAH tank.
9. Replace the white tank lid.
10. Rinse and remove chemical gloves to operate etch bath controller.
11. **Time the etch process manually or use the 30-minute controller.**  
**With chemical gloves off**, press **START** on the controller to begin the timer. The setting is 30 minutes.
12. At the end of 30 minutes, press **STOP/RESET** to stop alarm.
13. Press **PWR** to turn off tank heating.

**Use only the KOH holders or basket. Do not use holders or baskets from other process benches.**

### Rinsing

14. Don all the PPE before removing holder/basket from the tank.
15. Lift off the white tank lid and set aside.
16. Go to **RINSER** procedures.

## Cascade Rinser

**#1**

1. While wearing PPE **slowing** lift wafer holder/basket from Etch Bath. Hold above tank to allow dripping of the solution to stop before moving wafer holder/basket to cascade rinser.
2. Lower holder/basket into **#1** compartment of cascade rinser.
3. Replace the white tank lid to the tank.
4. Carefully rinse bench top surface to remove any solution drips.
5. Rinse chemical gloves and remove to operate rinse controller.
6. With chemical gloves off, push **START** on **RINSER** controller.  
5-minute rinse cycle begins  
5-second pre-alarm before end of rinse cycle
7. Push **STOP/RESET** to stop alarm.
8. Push **STOP/RESET** to reset rinser timer.

**#2**

9. Slowly lift holder/basket from **#1** compartment and move to **#2** compartment.
10. Push **START** on **RINSER** controller.  
5-minute rinse cycle begins  
5-second pre-alarm before end of rinse cycle
11. Push **STOP/RESET** to stop alarm.
12. Push **STOP/RESET** to reset rinser timer.

**#3**

13. Slowly lift holder/basket from **#2** compartment and move to **#3** compartment.
14. Push **START** on **RINSER** controller.  
5-minute rinse cycle begins  
5-second pre-alarm before end of rinse cycle
15. Push **STOP/RESET** to stop alarm.
16. Push **STOP/RESET** to reset rinser timer.
17. The rinse is complete. Lift holder/basket from **#3** compartment and set on perforated deck.

18. Go to the drying procedures.

Technique #1: Manually holding wafer or piece with tweezers and blow dry with nitrogen gun.

Technique #2: For full wafers only.  
Automatically dry wafers by transferring rinsed wafers into holder for Verteq spin dryer. Follow operating procedures.

**Available at  
later date**

19. Stored KOH wafer holders/basket in cascade rinser.  
**Do not move and use at other process benches.**

**LOG OFF CRESS**