

6" Hockey Pucks

## STANDARD OPERATING PROCEDURE

CORAL

Name:--

Model

Number:--

Location:--

What it does:--

Introduction: This is an SOP for fabrication of 6"-wafer carriers to be able to use the Endura metal deposition system on 4" wafers.

All labware is TRL "green-dot" contamination level.

Users must be trained in TRL photo and acid-hood, and ICL TMAH-KOH hood.

Safety:--

Procedure: TRL PHOTO

1. Get 6" wafers, single polish, and grow about 1/2u thermal oxide.
2. HMDS then coat with AZ4620 thick resist, spin 60 sec at 4K rpm.
3. Softbake 20 min @ 90C.
4. Backside coat w/ same resist/spin parameters as #2 (no HMDS).
5. Softbake 45 min @ 90C.
6. Expose in EV1 for 25 sec. you will need to load the mask with the > 5" chuck, maskholder and loadframe, but once the mask is loaded, > switch to a 6" chuck to load and expose the wafer.
7. Develop, maybe 3-5 min, in AZ440, mildly agitating the solution. Rinse.
8. Softbake 10 min to dehydrate surfaces.
9. Re-coat the back side of the wafer with AZ422, final spin 30s @ 4K rpm.
10. Softbake 10 min.
11. Re-coat the front of the wafer, on the outer 3/4" only. Do NOT let any resist splash or get into the "open" area in the center of the wafer.
12. Softbake 30 min.

### TRL ACID-HOOD

1. Put wafer into BOE for twice the time it takes to remove that oxide > thickness, ie if .5 u normally is removed in 6 minutes, use 12 min.
2. Inspect for defects in the open areas. if necessary, put back in BOE > to remove small oxide remnants in the open area.
3. Piranha strip the wafers of resist.

### ICL TMAH-KOH Hood

1. Use 6" 25 wafer teflon cassette, green-dot, load wafers pattern "up" at the H-bar end of the cassette.  
Put 7.5" quartz TMAH bath on wire shelf in water bath, fill to level. to cover wafers with TMAH, then cover with poly-pro lid.  
Fill water bath with DI, at least 1/2 full, turn power on, set at 80C. wait 1 hr.
2. put wafers in boat into TMAH. etch rate at 80C, 20 - 23u/hr. etch > about 1/2 way thru a typical 610u thick 6" wafer, perhaps 13 - 14 hrs.
3. Measure depth in TRL photo-room microscope. use clean fabwipes to > separate your wafer, which isn't yet post-TMAH cleaned, from the > microscope stage. etch further if

required, otherwise:

#### TRL ACID-HOOD

1. Piranha clean etched wafers in same TRL 6" green-dot cassette the TMAH-etch was done in.  
Process completed.

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