



BEFORE



AFTER

VACUUM CHAMBER PM TECHNIQUE TOK PHOTO TOP PLATE

OBJECTIVE:

TO EFFECTIVELY REMOVE THE CONDENSED PHOTO RESIST FILM FROM THE TOK PHOTO TOP PLATE IN A TIMELY MANNER, ELIMINATE PEELING DEFECTS AND IMPROVE TOOL PERFORMANCE

Vacuum Chamber:

TOK PHOTO

Vacuum Chamber Process Residue:

CONDENSED PHOTO RESIST FILM

Vacuum Chamber Components:

TOP PLATE

Old Procedure: IPA & GENERAL WIPER

PROBLEM:

- NOT ABLE TO REMOVE PHOTO RESIST FILM
- LEADS TO PEELING EFFECT
- IMPACTS PRODUCTION YIELD AND WAFERS/HR

New Procedure: FOAMTEC INTERNATIONAL'S PRODUCTS WITH DI WATER & IPA

RESULTS:

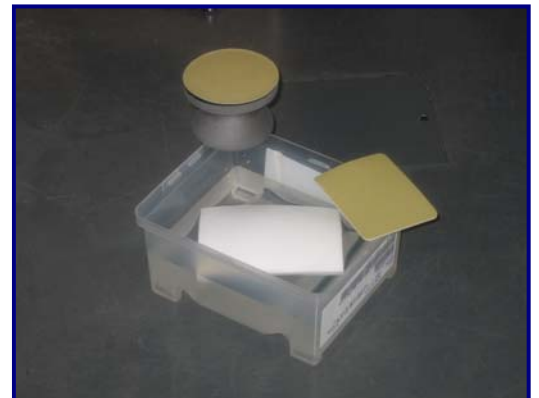
- NO PEELING EFFECT
- REDUCTION OF WIPERS AND IPA
- SIGNIFICANTLY REDUCED PM TIME

Vacuum Chamber Products:

TOK PHOTO TOP PLATE PM Kit

PM Kit P/N: [HT4500-TOKTP1](#)

- (2) [HT4754](#) UltraSOLV[®] Sponge
- (4) [HT4536DC3-1](#) 360 Grit Diamond ScrubDISK[®]
- (2) [HT4536D-10-1](#) 360 Grit Diamond ScrubPAD
- (1) [FT901](#) ErgoSCRUB[®] W/Hook
- (25) [HT5790S](#) MiraWIPES[®]



TOK PHOTO TOP PLATE PM PROCEDURE:

View "How to" instructional videos on <http://www.foamtecintlwcc.com/flash/>

- Step 1:** Using proper procedures and **safety guidelines** prepare TOK Photo Top Plate for wet clean

- Step 2:** Stage a small container of DI water inside a large plastic bag next to TOK Photo Top Plate

- Step 3:** Attach [HT4536DC3-1](#), 360 Grit Diamond ScrubDISK[®] onto [FT901](#) Soft ErgoSCRUB[®]

- Step 4:** Place [HT4754](#) UltraSOLV[®] Sponge, ErgoSCRUB[®] w/ScrubDISK[®] and ScrubPAD in container of DI water to moisten products (See Fig 1)



Fig 1: Foamtec International products in container of DI water

- Step 5:** Take dampened UltraSOLV[®] Sponge and pre-wipe top plate, removing any loose deposition or flakes. Continue to re-moisten the UltraSOLV[®] Sponge in container of DI water as necessary

- Step 6:** Take dampened 360 Grit Diamond ScrubDISK[®] attached to ErgoSCRUB[®] and scrub TOK Top Plate (See Fig 2)



Fig 2: ErgoSCRUB[®] w/360 Grit Diamond ScrubDISK[®] scrubbing top plate

TOK PHOTO TOP PLATE PM PROCEDURE (CONT'D):

- Step 7:** As loose deposition begins to build up on the top plate, take UltraSOLV® Sponge and wipe the area free of deposition
- Step 8:** Continue to rinse out sponge in container of DI water as necessary to free UltraSOLV® Sponge of excess deposition
- Step 9:** As ScrubDISK® loads up with deposition, pull & twist ScrubDISK® across dampened UltraSOLV® Sponge to unload ScrubDISK® (See Fig 3, 4 & 5)

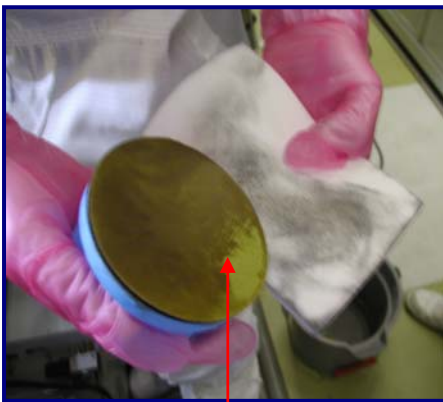


Fig 3: ScrubDISK® loaded with deposition



Fig 4: Pull & twist ScrubDISK® across UltraSOLV® Sponge

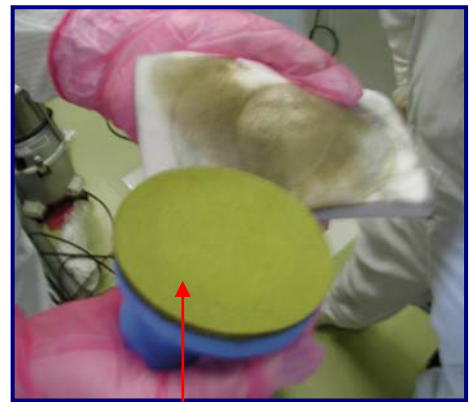


Fig 5: Unloaded ScrubDISK®

- Step 10:** As UltraSOLV® Sponge becomes loaded with deposition, rinse in container of DI water (See Fig 6 & 7)

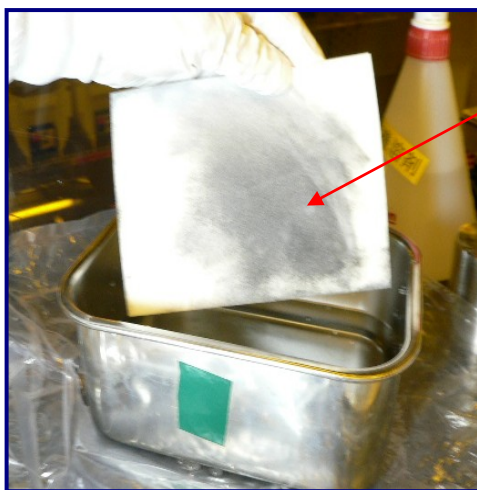


Fig 6: UltraSOLV® Sponge loaded with deposition

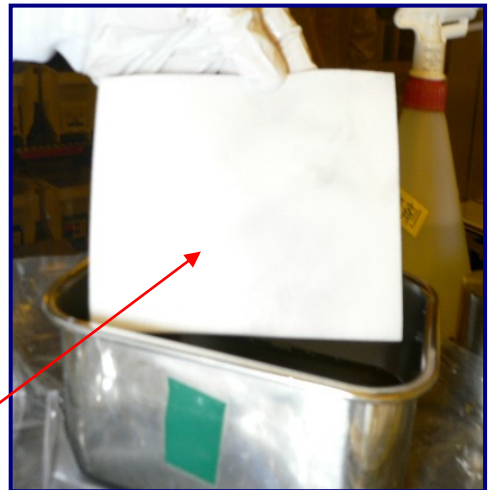


Fig 7: UltraSOLV® Sponge free of deposition after rinse in DI water

TOK PHOTO TOP PLATE PM PROCEDURE (CONT'D):

- Step 11:** Repeat steps 6 – 10, scrubbing the remaining areas of the top plate. Rinse out UltraSOLV[®] Sponge and unload 360 Grit Diamond ScrubDISK[®] as necessary
- Step 12:** Moisten the [HT4536D](#) 360 Grit Diamond ScrubPAD in container of DI water and rescrub all areas of the top plate using the same technique described above (**UNLOAD ScrubPAD AS NECESSARY**), concentrating on the areas of heavier deposition buildup and hard to reach areas throughout the top plate (See Fig 8)

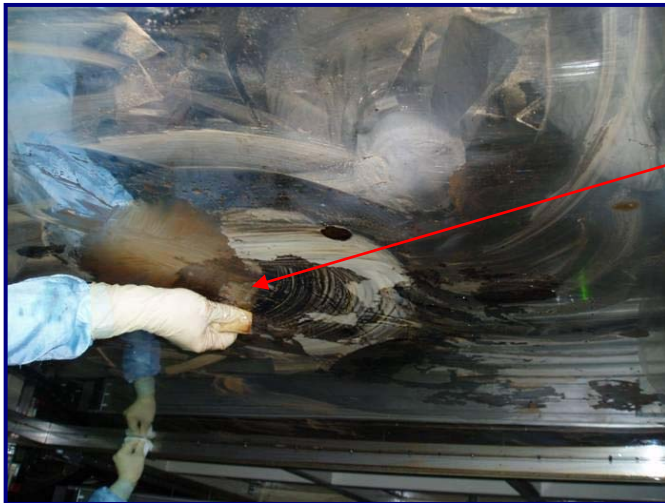


Fig 8: 360 Grit Diamond ScrubPAD scrubbing top plate

- Step 13:** Pending size of top plate, have second technician follow the same steps using a second [FT901](#) ErgoSCRUB[®] with [HT4536DC3](#) 360 Grit Diamond ScrubDISK[®] and/or [HT4536D](#) 360 Grit Diamond ScrubPAD in order to minimize time of scrub (See Fig 9)

Fig 9: Two technicians scrubbing TOK Top Plate



TOK PHOTO TOP PLATE PM PROCEDURE (CONT'D):

Step 14: When deposition has been sufficiently removed from top plate, rinse out UltraSOLV[®] Sponge with fresh DI water and re-wipe the entire top plate in preparation for FINAL WIPE PROCEDURE

FINAL WIPE PROCEDURE:

IMPORTANT NOTE

THE USE OF HT5790S MiraWIPES[®] DURING THE FINAL WIPE PORTION OF THE PROCEDURE IS A CRITICAL STEP TO EFFECTIVELY REMOVE PARTICLE DEFECTS FROM TOK TOP PLATE

Figure below shows how much more deposition the Foamtec International MiraWIPE[®] can remove from a critical surface compared to the standard fab wiper, making the MiraWIPE[®] Final IPA Wipe the most **CRITICAL STEP** of the PM procedure (See Fig 10a & 10b)



MiraWIPES[®] are the KEY STEP for DEFECT REDUCTION and IMPROVED TOOL RECOVERY

Step 15: Fold an HT5790S MiraWIPE[®] into quarters, apply IPA throughout wiper and proceed to wipe entire TOK Photo Top Plate

Step 16: Repeat as necessary with remaining MiraWIPES[®] to effectively wipe down TOK Photo Top Plate