

WCC VALUE ANALYSIS
AMAT QUANTUM SOURCE PM

AMAT QUANTUM SOURCE PM	FOAMTEC INTL WCC METHOD	STANDARD METHOD
REQUIRED PARTS	<p>(1) HT4536D-10-1 ScrubPAD 360Grit Diamond @ \$25.40/pc</p> <p>(1) HT4754 UltraSOLV Sponge @ \$4.87/pc</p> <p>(7) HT5790S MiraWIPE @ \$0.70/pc = \$4.90</p> <p align="center"><u>TOTAL COST = \$35.17/PM</u></p>	<p>(1) Pads of ScotchBrite @ \$1.20/pc = \$1.20</p> <p>(75+) LTK Fab Wipes @ \$0.27/pc = \$20.25</p> <p align="center"><u>TOTAL COST = \$21.45</u></p>
REQUIRED CHEMICAL SOLVENT	<p align="center">IPA: 1oz (6) MiraWIPE with IPA</p> <p align="center">H₂O₂: 0.2oz (1) MiraWIPE® with H₂O₂</p>	<p align="center">IPA: 4oz (20) LTK Wipes soaked with IPA</p> <p align="center">H₂O₂: 2.0 oz (10) LTK Wipes soak with H₂O₂</p>
HAZARDOUS WASTE	<p align="center">(1) ScrubPAD (1) UltraSOLV® Sponge (7) MiraWIPES®</p> <p align="center">(9) TOTAL ITEMS</p>	<p align="center">(1) ScotchBrite (75) LTK Wipes</p> <p align="center">(76) TOTAL ITEMS</p>
PM CLEAN TIME	<p align="center">Total Scrub Time – <u>30 Min.</u></p>	<p align="center">Total Scrub Time – <u>2 Hrs</u></p>
ANALYSIS: (10) AMAT QUANTUM SOURCE CHAMBERS	<p>SOLVENT/YR:</p> <ul style="list-style-type: none"> • IPA – 170oz • H₂O₂ – 34oz <p>WASTE: 1,530 ITEMS TOOL DOWNTIME: 85 Hrs</p>	<p>SOLVENT/YR:</p> <ul style="list-style-type: none"> • IPA – 680oz • H₂O₂ – 340oz <p>WASTE: 12,920 ITEMS TOOL DOWNTIME: 340 Hrs</p>

FOAMTEC INTERNATIONAL WCC VALUE ANALYSIS AMAT QUANTUM SOURCE PM

Vacuum Chamber:	AMAT Quantum High Current
Vacuum Chamber Process Residue:	Process Induced Residue
Vacuum Chamber Components:	Source Chamber

OBJECTIVE:

To demonstrate how the Foamtec International UltraSOLV[®] Chamber Cleaning Technique will provide the REDUCTION of chemical solvent, while cleaning the AMAT Quantum Source Chamber more effectively, and in less time - providing a SIGNIFICANT reduction in operating cost

OLD PROCEDURE

Products Used:

- (1) ScotchBrite[®] Scrub Pad
- (75) LTK Wipers
- (10) Soaked with Hydrogen Peroxide
- (20) Soaked with IPA
- (45) Soaked with DI Water

Clean Time: 2 Hrs

FOAMTEC INTERNATIONAL PROCEDURE

Vacuum Chamber Products Used:

- (1) HT4536D 360 Diamond Grit ScrubPAD
- (1) HT4754 UltraSOLV[®] Sponge
- (7) HT5790S MiraWIPES[®]
- (1) Soaked with Hydrogen Peroxide
- (6) Soaked with IPA

Clean Time: 30 Minutes

OLD METHOD

Technicians pre soak an abundance of fab wipers with DI water and place throughout chamber to pre soak ETCH Chamber for 30 minutes to 1 hour.

Technician uses multiple red, or green, ScotchBrite® abrasive pads to remove Metal ETCH deposition from chamber. Using ScotchBrite®, the scrub portion usually takes over 8 hours to complete.

Using ScotchBrite®, leads to particle problems and tool recovery issues based on the shedding of fibers and metal contaminants associated with using ScotchBrite® in critical vacuum chambers.

During scrub portion of PM, technician continually wipes the chamber area with an abundance of fab wipers to remove deposition. This generates a significant amount of hazardous waste.

Upon completion of scrub portion of PM, technician will perform a final IPA wipe down using standard fab wipers. Standard fab wipers are significantly less effective in removing the micron level deposition from the chamber than the Foamtec International HT5790S MiraWIPE®. This can lead to extended tool recovery times, particle failures and excessive seasoning runs.

CONCLUSION:

The current PM procedure uses over 6 pads of ScotchBrite® and 150+ standard fab wipers, with a total pm scrub time over 8 hours. This current procedure is inefficient and causes tool recovery problems and poor tool performance.

FOAMTEC INTERNATIONAL WCC ULTRASOLV® CHAMBER CLEANING TECHNIQUE

SEQUENCE OF EVENTS:

Step 1: Prep Quantum Source Chamber for PM.

Step 2: Use UltraSOLV® Sponge with DI Water and wipe entire source chamber.

Step 3: Use 360D Grit Diamond ScrubPAD with DI Water and scrub source chamber, removing deposition from chamber walls.

Step 4: Unload Diamond ScrubPAD onto UltraSOLV® Sponge as ScrubPAD begins to load up with deposition. Repeat as necessary.

- Step 5:** Continue to reuse UltraSOLV® Sponge with DI Water to wipe out source chamber as necessary.
- Step 6:** Repeat steps 3 – 5 until all deposition is removed from entire chamber.
- Step 7:** Take (1) MiraWIPE® and apply a small amount of Hydrogen Peroxide. Proceed to wipe High Voltage Source Bushing to remove deposition build up.
- Step 8:** Using the remaining MiraWIPES®, apply a small amount of IPA and proceed to wipe out the entire source chamber & source bushing to remove any moisture and remaining particles.

NOTE: THIS LAST STEP IS A VERY CRITICAL STEP TO ENSURE AMAT QUANTUM SOURCE CHAMBER RECOVERS FROM PM IN THE MOST EFFICIENT MANNER, MINIMIZING PUMPDOWN TIME AND REDUCING PARTICLES.