New Processing Foams

BPT one Process Technologies, a division of Berkshire Holding Corporation

Berkshire Process Technologies - WHO?

- Knits, fabrics and foams for facilities management
- Chemistry, Pads and Probes for Tool Cleaning
- Automated Tool Consumables for wet processing and wash
- Material Advancements - “Gore-Tex approach” as formulations and processes

About Berkshire

- Berkshire Corporation - Clean Room Facilities consumables
- Berkshire Company Ltd - Japan, Korea, Taiwan production and distribution
- Berkshire International Ltd - SE Asia & Europe production and distribution
- BPT one Process Technologies - New Materials and Configurations

Goals for BPT one Clean Products

- Answering the humor, “Contamination Control is the controlled contamination of surfaces and atmospheres!”
- New Materials for surfacing, coating, processing and cleaning.
- New Configurations and Conformance for ease of use and “one clean” results - a tool to do a complete job!

The NEED for new foams

- Chemical versatility
- Longevity
- lower flow requirements, less chemistry
- Uniform application
- Precise removal
- Rapid chemical change
- Return from “DRY” to operations

New Foams

- Hybridized PVA
- Hybridized polyurethane
- Poly vinyl ethylene
- Reinforced Foam - Sleeves
- Abrasive Foams - Burnishing
- High-density foams - polishing pads

“This isn’t PVA, what is it?

- Hybridizing - a new backbone
- Removing Pore Formers
- Maintaining uniform cells or pores
- Eliminating “skin” - micropores
- Building strength and elasticity
- Surface modification for wicking

Do you make a BRUSH?

- Nodule History and Affect - emulate bundles of bristles, limited contact
- Nodule Turbulence vs Shallow Diamond/Ellipse-on-diamond
- Micropore Pattern as 100% delivery and removal
- Hybrid PVA allows CHANGE from nodules

Rollers revisited

- Maximum surface tension and contact
- Maximization of micropore wicking
- Uniform chemical application and mechanical action
- Precise narrow footprint and stress reduction
- AS a BASE for WAFER

The Sleeve

- Retrofit or New - 6-12mm ID to OD on OVER-CORES or Assemblies.
- Low flow/rapid flush - multiple chemistries in station.
- WET or VAPOR processes - Single station wash systems.
- Minimizes Process and Wash Station size

One year of results

- PVh in new protocols and equipment
- Stage One - Wet Etch/Strip
- Stage Two - Process Neutralization
- Stage Three - Wash/Particle removal
- Stage Four - Final Clean
- 1.7 to 14 pH compatible

Chemical Compatibility

- Hydroxylamines
- HF, Oxalic and Acetic Acid
- 5% IPA in ammonium disinfectant
- Hydrogen Peroxide
- Most EKC Chemistries
- Fine Slurries (Burnishing)
- 3M Novec HFE solvents and coatings

Expanding contact processing

- Post CMP, SFP and CVD Planar Etch
- Post CVD for EUV and LowK Dielectric
- Post EMP for EUV and LowK Dielectric
- Post Resist for Dielectric and Metalization
- Post back plating burnishing
- Coating application
- microThick Film processes

Technology Roadmap

- Assemblies - Retrofit for upgrade usage of installed wet processors
- Co-solvent contact cleaning - Vapor in gas as contact wet-to-dry processing
- Drying Sleeves - vacuum driven, contact drying
- Single station strip, neutralize, wash, DRY