

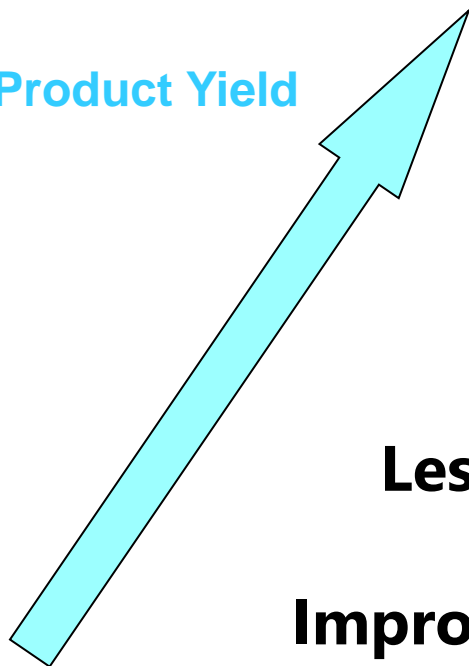


Diamond Scrub Pads



A Robust solution for process-chamber cleaning

Product Yield



DSP Diamond Scrub Pad

Reduces particles & ionic contamination

Less Downtime

Improves Fab Yield & Productivity





Diamond Scrub Pad Advantages

- Scrub cleaning fields
 - Processes via vacuum chambers :
 - Ion Implantation
 - Dry Etch
 - CVD PVD
 - ALD
 - CMP
- Fast cleaning on tools & parts such as
 - Aluminum / Anodized Aluminum
 - Stainless Steel
 - Ceramics
 - Glass, Quartz etc...
- Fiber free process : Clean Process
 - Global particle level reduction
 - Reduction of ionic residue
- DIW cleaning
 - Elimination of H_2O_2 reduces recovery times
 - Eliminate safety hazards using H_2O_2



Diamond Pad New Generation

- Variety of Grit size to suit scrub cleaning process
 - Selection of the grit to the part to be cleaned depending on application
 - From Fine to Coarse scrub

Mesh	3 000	1 600	600	250	250D	235
Grit	2000	1350	450	360	320	290
	1350	800	400	320	280	250
µm equiv.	6	12	35	80	80	90

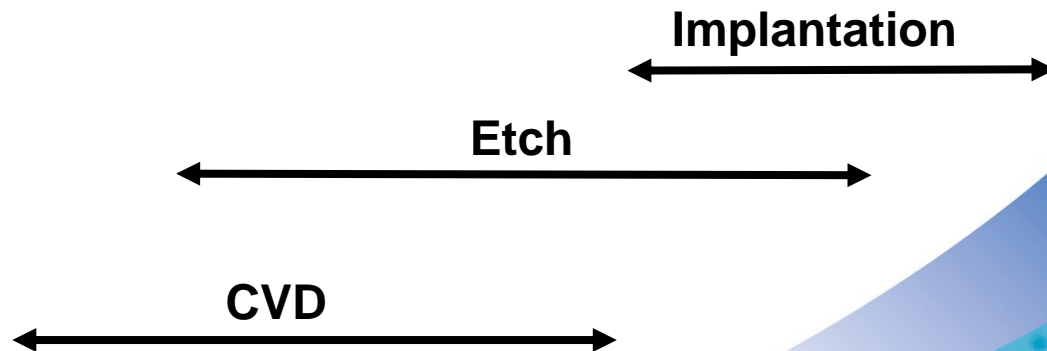
Gasket

Implantation

Polish

Etch

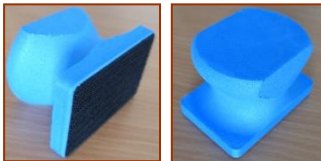
CVD





Diamond Pad New Generation

- EURIS has engineered a variety of Next Generation Diamond Scrub Pads to improve chamber cleanliness
 - Clean design; no fiber compared to conventional method Scotch-Brite® etc...
 - Uniform efficiency : No break-in / burn-in required (Break In =Exple. CMP PAD exchange process step")
 - Less scratches
 - Smoother surface
 - Real minimization of tool wear
 - Design creates surface polish effect & reduces scratches
 - Applications on parts in contact up to laser reflection finishing.
 - Do not damage chamber wall
 - Ease of use with ergonomic handle
 - Fit technician hand
 - Prevent technician hand pain during cleaning
 - Durable and re-usable design environment friendly



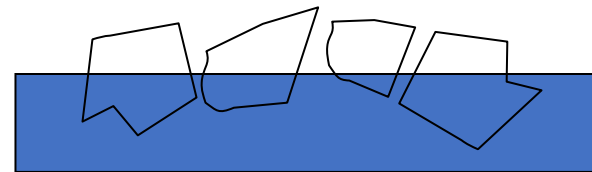


Technical Aspects

Backing type

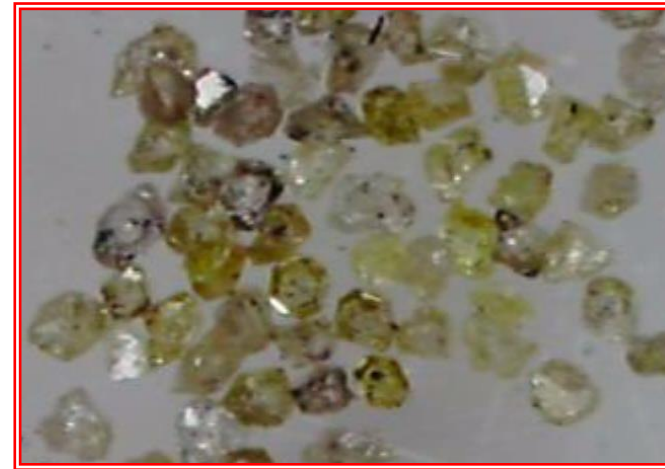
- DSP pad composition

- Mylar plastic film (polyester) : No textile (Our PADS cannot be hand cut during usage)
- Constant manufacturing process
- Improved reproducibility : Control of Roughness
- Abrasive particles strongly attached to backing film : No abrasive loss

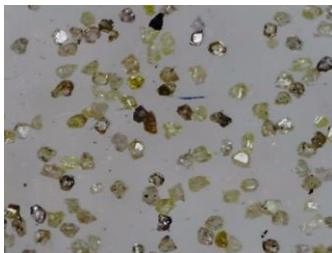


- Diamond size & distribution

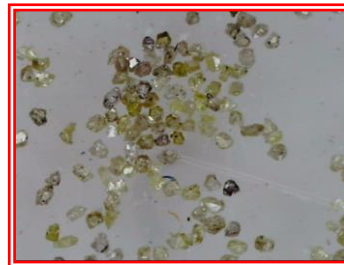
- EURIS Pad Diamond aspect
 - Sharp grains
 - Size sorted
 - Medium Deposition Density



Low Diamond density
Not used, less efficient



Medium Density :
Optimum, no frequent
PAD unload required.

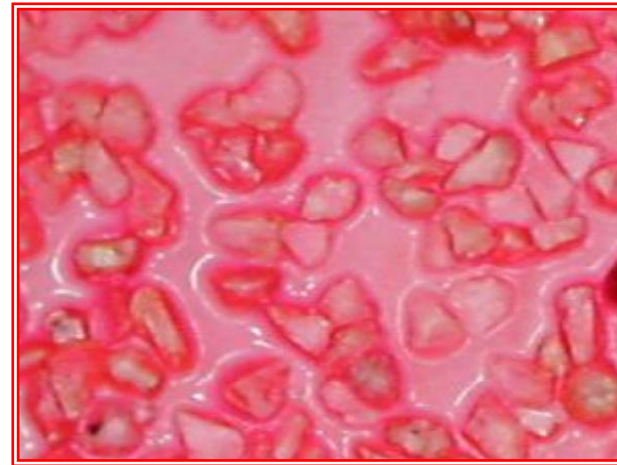
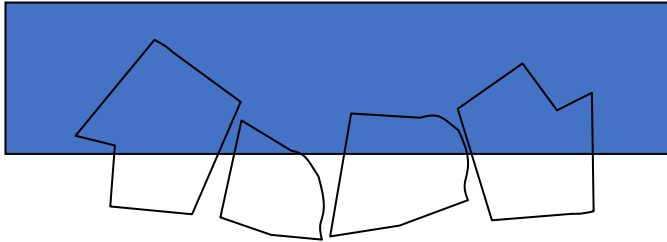


High Density :
Trap material, need
frequent PAD unload

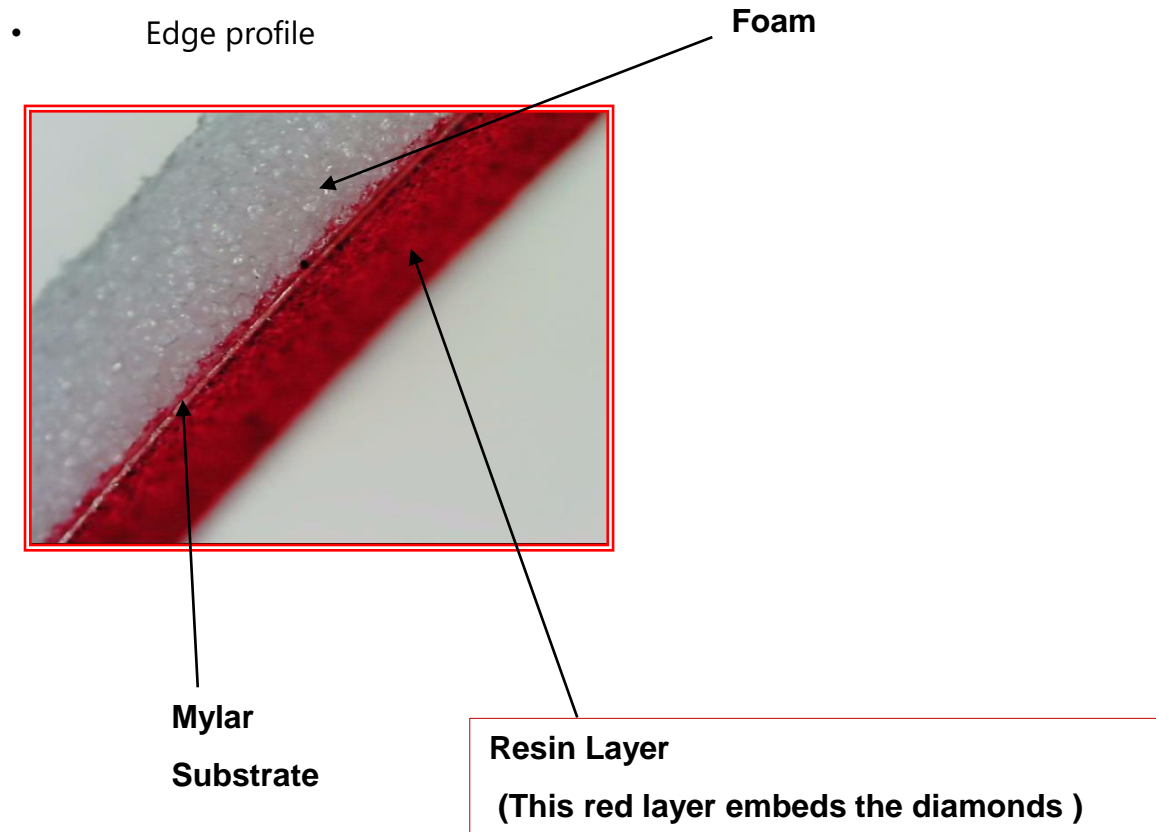


- Diamond size effect on bonding process

- Diamond size Controlled by selection of the diamonds sizes within +/- 25-33 % of the material available grain size dispersion.
- ✓ Sharpness is controlled

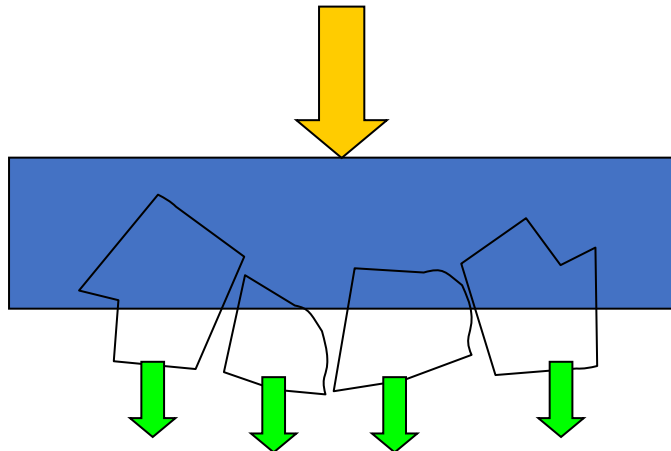


- Example



• Effect on Scrub Pressure

- Operator applies a force F on the scrub pad with his hand



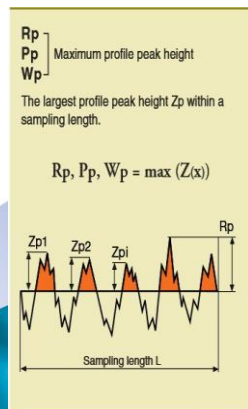
Part to be scrubbed

A UNIFORM SCRUBBING PRESSURE

Consistent Pressure Distribution

Global uniform pressure

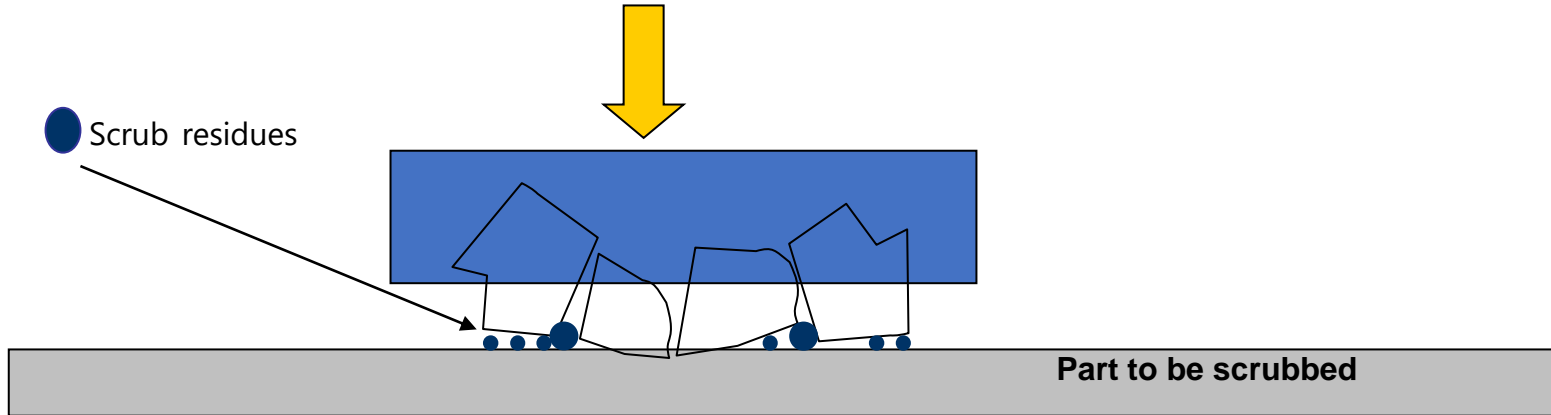
→ **A SMOOTHER** process: low R_p (R_p = Roughness parameter "p")



Technical Aspects

Diamond Size

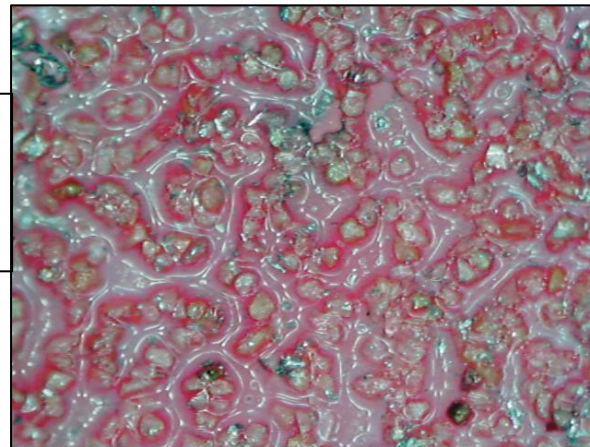
- Effect on scrub residues using **DI water**



Low loading effect (Medium size diamonds distribution)

→ **No need to unload**

Micro channels allows residues **evacuation:**
Self unloading pad



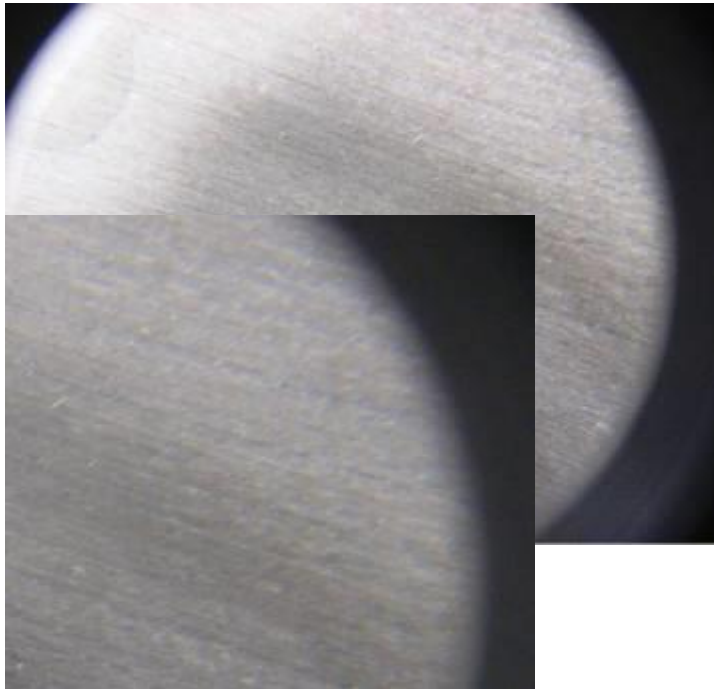


Technical Aspects

Results on anodized aluminum

- DSP-250

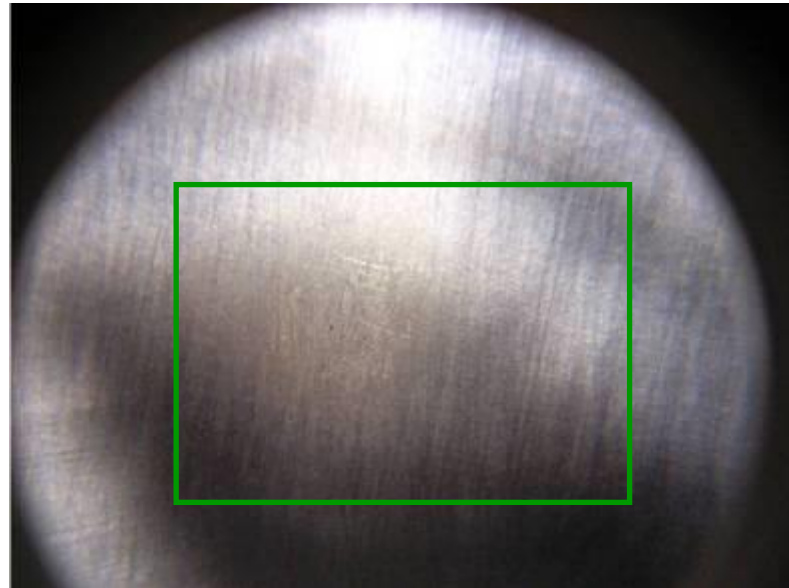
- Example of a 230mm Anodized Aluminum disc scrubbed until the anodized layer is removed



**Lines are induced by
Machine-shop cutting tool.**

No scrub scratch

- Scratch done intentionally –
Break through an anodized aluminum layer



Scratch is difficult to generate due to global area scrubbing
No indentation of aluminum



Technical Aspects

Results on Ceramics

- Scratch reduction makes Euris DSP the best candidate for Ceramic parts scrubbing
 - Electrostatic Chucks
 - HDP Domes
 - End effectors etc...



Wide product range

• Clean Room Use products

- Foam backing for hand process
- Loop backing for ergonomic hand tool process
- Custom specific Design possible
- Double bag packing







• Colored by Grit Clean Room Use products



- Foam backing for hand process
- Loop backing for ergonomic hand tool process
- Pack of 10 packing

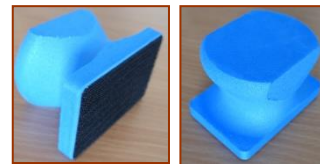




Product Applications





DSP part #	Applications
235-L-1 235-F-1 	Heavy + duty for hard process residue Thick process residues Hard process residues
250D-L-1 250D-F-1 	Heavy duty for hard process residue Hard process residues
250-L-1 250-F-1 	High for hard process residue
600-L-1 600-F-1 	Medium duty for medium process residue


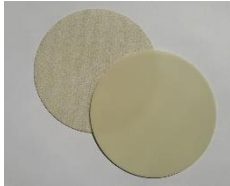
DSP part #	Applications
1600-L-1 1600-F-1 	Medium low duty for low process residue
3000-L-1 3000-F-1 	Low duty for light process residue





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