

# PlanarClean® Formulated Solutions

*For Cu post-CMP process*

PlanarClean® is the next-generation post-CMP copper cleaning product designed for use following the barrier CMP step. Formulated using our high-productivity testing and development process, PlanarClean comes as an aqueous solution with strong-acting agents that are very effective at preventing copper corrosion during and after the cleaning process. In addition, PlanarClean is compatible with copper and various dielectric materials, including porous low- $\kappa$ . It is also compatible with all major CMP platforms (Applied Materials®, Ebara®, etc.). PlanarClean requires no additional heating (used at ambient temperature). With PlanarClean, you can proceed with the confidence, effectiveness and efficiency that come from using Entegris copper integration products.

## HIGHLIGHTS

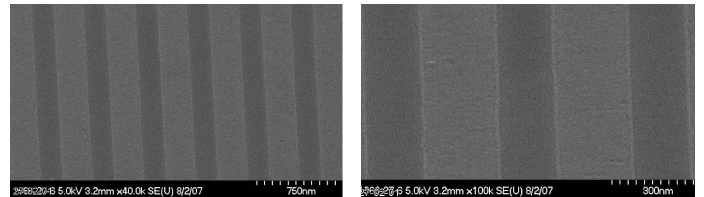
- Compatible with low- $\kappa$
- Applicable for all CMP platforms
- Excellent organic residue removal
- Improved electrical performance (TDDb)
- Low copper roughness
- Low cost of ownership
- No special waste treatment required for disposal
- Effective metallic contamination removal from dielectric
- No copper corrosion during extended queue time

## MATERIAL COMPATIBILITY

High density polyethylene (HDPE), PFA, polypropylene, 316L stainless steel, quartz, and Teflon® (PTFE) are normally suitable materials of construction. Diluted PlanarClean is compatible with PVA brushes.

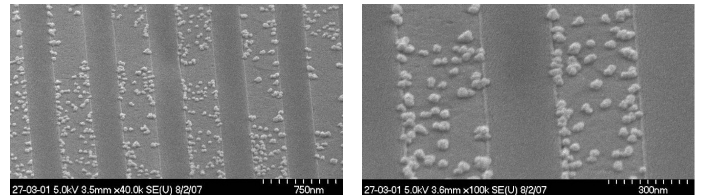


## PERFORMANCE DATA

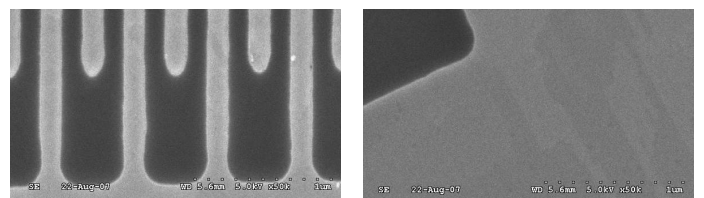


*With PlanarClean*

*With PlanarClean there is no copper corrosion during extended queue time.*

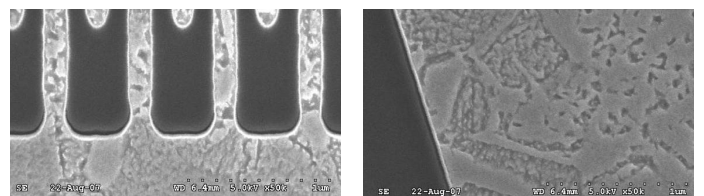


*Without PlanarClean*



*With PlanarClean*

*With PlanarClean you get a smoother surface with no roughness after each use.*

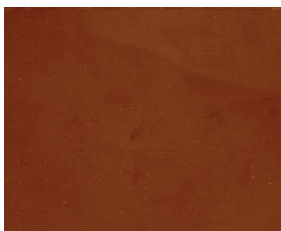


*Without PlanarClean*

## HANDLING, STORAGE, AND PACKAGING

Before using this product, read the MSDS, as well as the *PlanarClean Instructions for Use and Evaluation* document. PlanarClean is available in 5-gallon and 55-gallon HDPE drums. Smaller sizes may be available upon request.

For PlanarClean applications, customized recipes may be needed to meet application-specific requirements. Contact Entegris technical personnel for assistance in adjusting process variables (time, pressure, rpm, dilution, etc.). Adjusting these variables can optimize performance and cost of ownership.



With PlanarClean



Without PlanarClean

*PlanarClean's formulation is designed to eliminate defects and leave a smooth surface.*

For PlanarClean applications, customized recipes may be needed to meet application specific requirements. Before conducting any trials, please contact Entegris Customer Service at 1-888-301-4401 for assistance in adjusting process variables (time, pressure, rpm, dilution, etc.) Adjusting these variables can optimize performance, total cost of ownership, and overall effectiveness of PlanarClean product use.

## PROCESS RECOMMENDATIONS

<b>Total chemical process time</b>	60 seconds
<b>Brush box 1 process time</b>	30 seconds (+30 second DI rinse)
<b>Brush box 2 process time</b>	30 seconds (+30 second DI rinse)
<b>Dilution</b>	30:1 to 60:1 (with DI water)
<b>SRD</b>	30 seconds
<b>Temperature</b>	Ambient

*Chemical delivery system requires pressurized inert gas blanketing ( $N_2$ ).*

## FOR MORE INFORMATION

Please call your Regional Customer Service Center today to learn what Entegris can do for you. Visit [entegris.com](http://entegris.com) and select the Contact Us link to find the customer service center nearest you.

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