

Addressing metal contamination in CMP

Could your CMP process be suffering from metal contamination?

Processes are getting more sensitive

Semiconductor advanced and mature node processes are increasingly sensitive to the presence of metals like nickel, iron and manganese, among others, causing contamination and reducing yields.

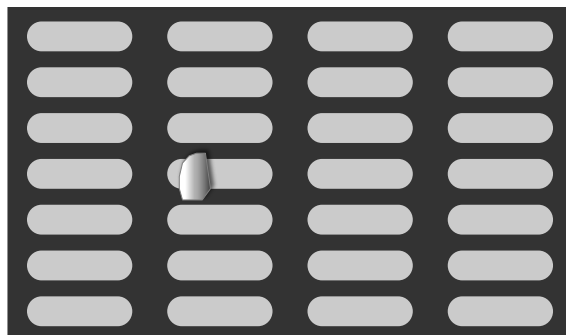


Slurries are getting harsher

As metal film CMP processes (W, Cu) and hard substrates (SiC) become more common, acidic and high flow rate slurries are often necessary to achieve effective removal rates.

Look for these common defects:

- High metal concentrations in the slurry
- Diamond loss and scratching caused by corrosion of the disk surface
- Unintended effects during processing caused by metal ions reacting with the wafer or other materials
- ICs experiencing electrical shorts or defects caused by metal residue on the surface



Metal-free cutting surfaces



3M™ Flexible Pad Conditioner

Engineered working bristles deliver high-performance texturing and conditioning to help lower defect rates.



3M™ Trizact™ Pad Conditioner

Advanced microreplicated disks using CVD diamond over ceramic substrates for consistent high performance.



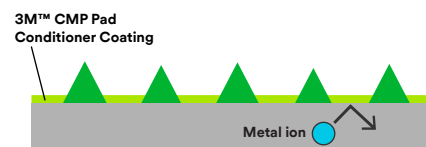
3M™ Pad Conditioner Brush

For soft pad applications, metal-free 3M™ Pad Conditioner Brushes effectively clean the pad surface.

New protective coatings for existing pad conditioners

Enhance any 3M pad conditioner disk with a thin, clear, protective **3M™ CMP Pad Conditioner Coating**. These micron-thick, clear coatings trap metal ions, preventing them from leaching into the slurry or wafer.

Plus, these slick coatings, available in hydrophobic and hydrophilic variants, help protect the disk surface from harsh slurries like permanganates often used for tungsten and silicon carbide processes. Selective area and full-disk applications available.



- Up to 99% reduction in nickel, manganese, iron and other metal ion leaching*
- Equivalent removal rate performance to uncoated pad conditioners
- Minimal process changes necessary

Apply 3M™ CMP Pad Conditioner Coatings to disks with metal-free cutting surfaces for comprehensive metal leaching protection

* Per 3M test data

Safety Data Sheet: Consult Safety Data Sheet before use.

Regulatory: For regulatory information about this product, contact your 3M representative.

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