



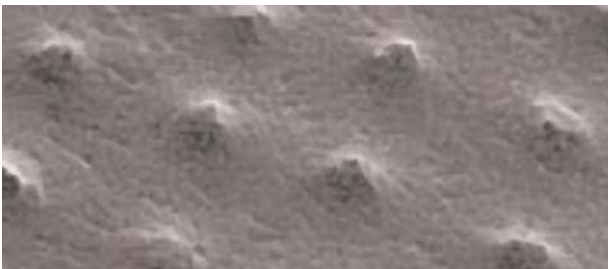
DiaGrid® Pad Conditioners



DiaGrid® pad conditioners are available in several styles to accommodate all major polishing platforms

DESCRIPTION

DiaGrid® pad conditioners incorporate many of the best features available in pad conditioning technology, making them ideal for the demands of today's complex CMP processes. The product consists of a stainless steel base, overlaid with brazed diamonds arranged in a grid pattern that provides superior control of diamond spacing, height and size. A robust, chemically enhanced braze holds the diamonds firmly in place with a chemical bond that is extremely resistant to diamond loss. The entire surface is covered with the DiaShield® PVD diamond overcoat which offers superior chemical resistance, ideal for use in tungsten and copper processes.



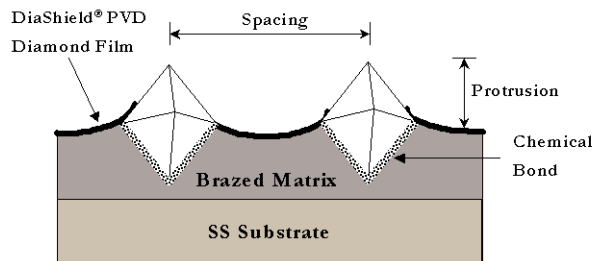
A microscopic view shows diamonds embedded in the DiaGrid® Pad Conditioner's unique DiaShield® PVD diamond overcoat

KEY FEATURES

- Superior diamond placement control
- Superior uniformity of diamond height
- Robust brazed matrix
- DiaShield PVD diamond overcoat
- Stringent QC inspection on every pad conditioner
- Factory high pressure pre-conditioning procedure

BENEFITS

- Enhanced process stability
- Increased conditioner lifetime
- Increased polishing pad lifetime
- Lower Cost of Ownership
 - Less downtime
 - Improved throughput
- Reduced risk of defectivity due to diamond pull-out
 - No reported incident of diamond loss
- Increased wafer yield
- Enhanced resistance to acidic slurries
- Compatible with Tungsten (W) and Copper (Cu) slurry chemistry
- Direct replacement for most applications



The precise and consistent spacing, uniform protrusion, and the DiaShield® PVD diamond overcoat on DiaGrid® pad conditioners contribute to process stability, longer consumable lifetimes, lower defectivity and ultimately decreased cost of ownership.

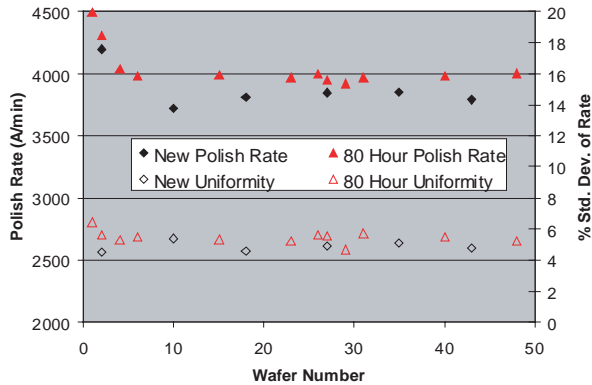


creating the
flawless surface

EBARA PROCESS DATA

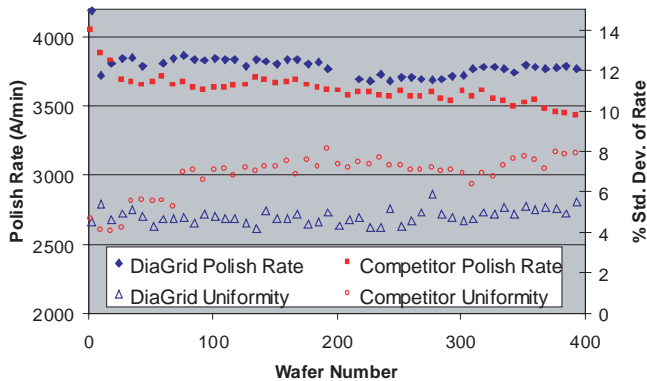
Process data from oxide polishing on an EBARA EPO222D polisher. This process utilizes a coupled Rohm and Haas Electronic Materials consumable set including DiaGrid conditioning pellets, an IC1000™ A2 perforated primary pad over a Suba® IV subpad, and Klebosol® 1501-50 oxide polishing slurry.

Process Rate



Polish rate and uniformity data illustrating the performance of a set of Kinik conditioning pellets after 80 hours of wear on the EBARA polisher. Uniformity data represents a 3mm edge exclusion.

Uniformity



Polish rate and uniformity data from a 400 wafer run on the EBARA polisher. Uniformity data represents a 3mm edge exclusion.

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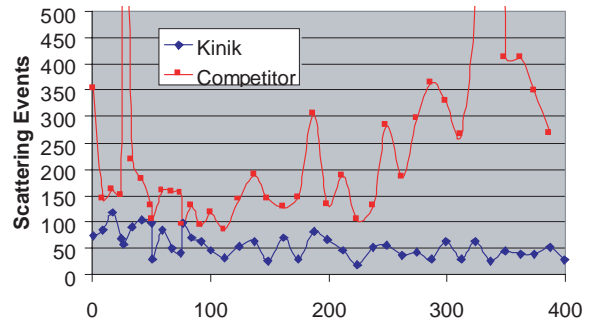
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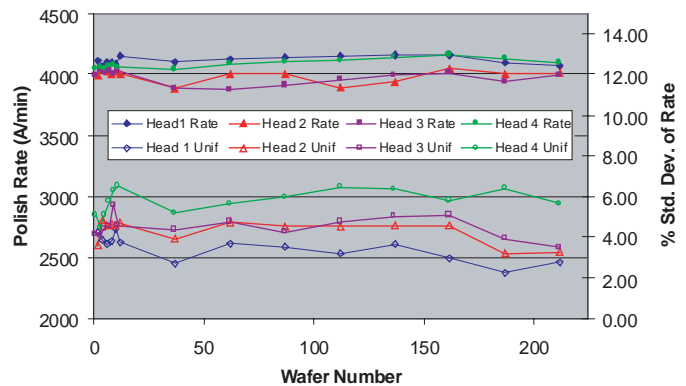
Defectivity Data

Defectivity data from a 400 wafer run on the EBARA polisher



MIRRA® PROCESS DATA

Process data from oxide polishing on an Applied Materials Mirra polisher. These data utilize a coupled Rohm and Haas Electronic Materials consumable set consisting of an IC1010™ primary polishing pad and Klebosol® 1501-50 polishing slurry.



Polish rate and uniformity data from a 200+ wafer baseline run on the Mirra® polisher