



Diamond Pad Conditioners for CMP

High-temperature sintered abrasive technology provides the best diamond retention and conditioner consistency

Only 3M™ Diamond Pad Conditioners feature both mechanical and chemical bonds to keep diamonds intact

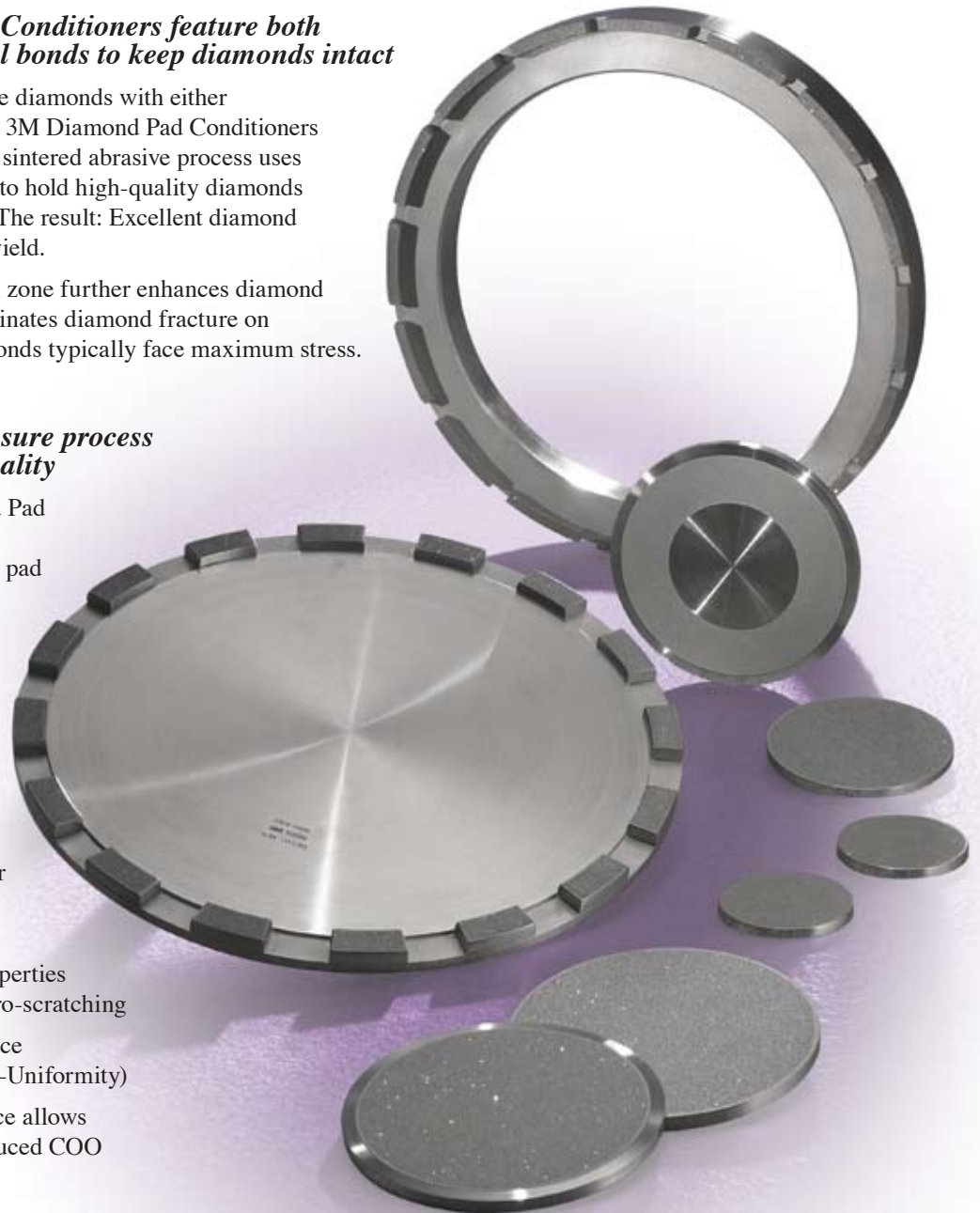
While other conditioners secure diamonds with either mechanical or chemical bonds, 3M Diamond Pad Conditioners provide both. An exclusive 3M sintered abrasive process uses high temperature and pressure to hold high-quality diamonds within a special metal matrix. The result: Excellent diamond retention and improved wafer yield.

A diamond-free edge exclusion zone further enhances diamond retention. This innovation eliminates diamond fracture on conditioner edges, where diamonds typically face maximum stress.

3M design advantages ensure process consistency and wafer quality

The advantage of 3M Diamond Pad Conditioners is their consistent performance, allowing optimal pad life and a more consistent CMP process.

- Single-layered diamond grid array allows consistent pad wear and debris removal
- Controlled diamond spacing and protrusion results in excellent pad planarity
- Tight flatness specification for 3M disks enhances pad wear uniformity and pad planarity
- Strong diamond retention properties reduce the possibility of macro-scratching
- Consistent removal rates reduce WIWNU (Within Wafer Non-Uniformity)
- Improved process performance allows for lower defect rates and reduced COO

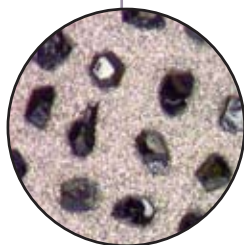
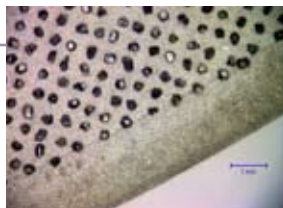
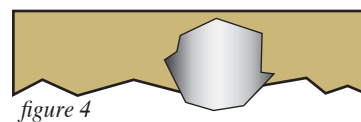
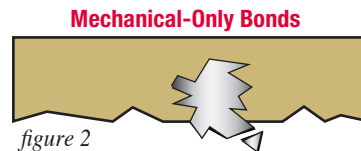
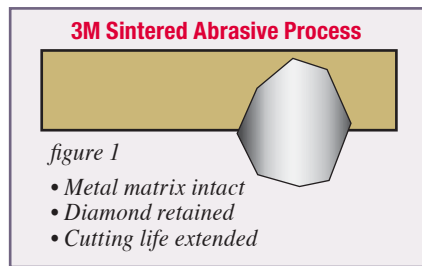


3M™ Diamond Pad Conditioners

Our sintered abrasive process helps prevent diamonds from chipping and falling out while optimizing cutting points and cutting life. By subjecting diamonds to high temperature and pressure, our unique process provides a strong bond that secures blocky diamond with maximum protrusion (*figure 1*).

The 3M process avoids the shortcomings of mechanical-only bonds:

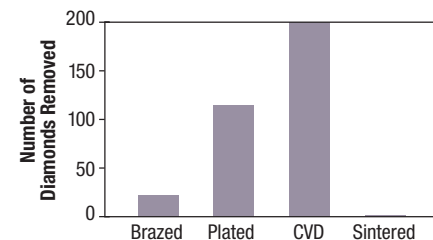
- Jagged diamonds that hold in place but tend to chip (*figure 2*)
- Block diamonds that don't chip but are prone to fall out (*figure 3*)
- Low-protrusion diamonds with insufficient cutting points and cutting life (*figure 4*)



3M is Committed to Quality

- Customized conditioner characteristics match customers' specific needs for conditioning aggressiveness
- Only 3M offers an individual aggressiveness value for every disk or ring based on proprietary aggressiveness test which directly correlates to pad wear rate on the tool
- Six Sigma methodology ensures conditioner quality and consistency
- Broad customer acceptance and usage demonstrate the excellent diamond removal rates, pad shape profiles, pad wear rates, and defect levels generated by 3M™ Diamond Pad Conditioners

High Pressure Wash Test



Number of diamonds removed over entire disk for 3M vs. 20X field-of-view for competitors

United States
3M Electronics Markets
Materials Division
800 810 8513

Europe
3M Belgium N.V.
32 3 250 7521

China
3M China Ltd.
86 21 6275 3535

Taiwan
3M Taiwan Limited
886 2 2704 9011

Korea
3M Korea Limited
82 2 3771 4114

Japan
Sumitomo 3M Limited
813 3709 8250

Philippines
3M Philippines, Inc.
63 2 813 3781

Singapore
3M Singapore Pte. Ltd.
65 454 8611

Malaysia
3M Malaysia Sdn. Berhad
60 3 706 2888

Other Areas
651 736 7123 (U.S.)

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Issued: 6/08 6391HB
60-5002-0007-0

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