



DISCO

Kiru · Kezuru · Migaku Technologies



Grinding Wheels

UltraPoligrind

Achieves high die strength while maintaining gettering performance



Use of super-fine diamond abrasive achieves high die strength while maintaining gettering performance, and offers new solutions for wafer thinning.

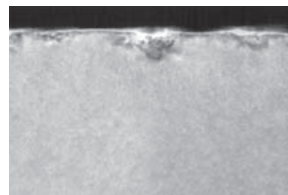
UltraPoligrind employs a super-fine diamond abrasive to create higher die strength and enable grinding with even less damage than Poligrind. This new finish grinding wheel is also able to maintain a gettering effect, which is often removed when a stress relief process is used. It is a chemical-free normal grinding process resulting in a low environmental impact, and allows wafer thinning grinding with ease of operation.

- High die strength with little damage to wafers
- Maintains the same gettering performance as normal grinding

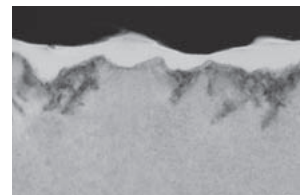


■ TEM comparison of wafer damage

The damaged layer of a wafer ground using UltraPoligrind is extremely small compared to that of a wafer ground using a #2000 grinding wheel.



UltraPoligrind Wheel



#2000 Wheel

Applications

Silicon Wafers, etc.

UltraPoligrind



Specifications

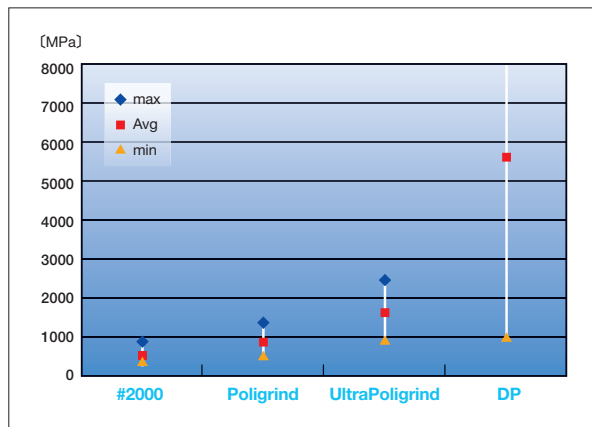
Wheel size (mm)	Tooth indication	Shape	Arrangement
200	CT	Continuous	Triangular
300			

PW08 - UA0140 300 × 3W × 7T - CT

Tooth type	Tooth width (mm)	Tooth height (mm)
UA0140	3.0	7.0

Experimental Data

Die strength comparison (Ball bending)

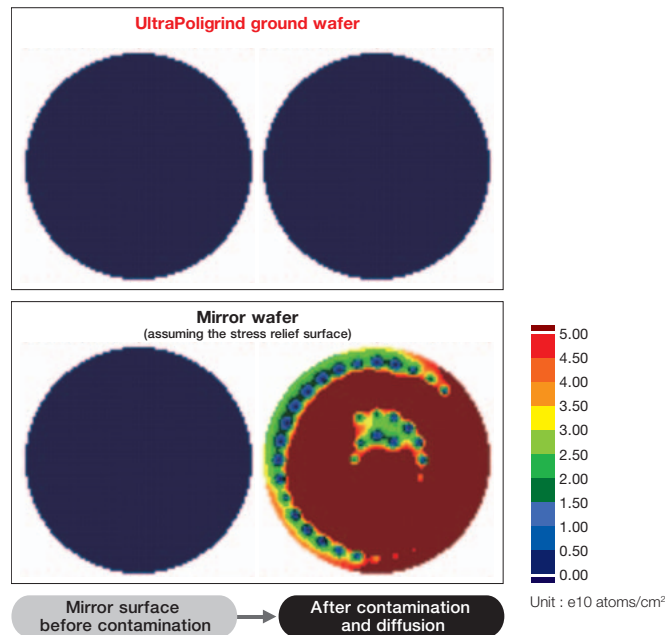


Gettering effects

The amount of Cu precipitated onto the polished surface of a mirror wafer sample after applying a copper solution is 1.0E11 and more. In contrast, the amount of Cu precipitated onto the polished surface of an UltraPoligrind sample is the detection limit or less, thus indicating that the UltraPoligrind surface provides gettering.

TXRF measurement data before and after Cu solution application (ø8" mirror wafer)

To quantitatively measure the gettering effects, a sample was contaminated with a Cu solution and then the Cu was diffused in at 350°C for 3 hours and then analyzed using TXRF (Total-Reflection X-ray Fluorescence). For the UltraPoligrind sample, the Cu solution was applied to the ground surface. The Cu was then diffused in at the same time and temperature, and the amount of Cu precipitated onto the polished surface was measured using TXRF.



*Detectable range at below 0.5E10 atoms/cm²

Assistance with Using Poligrind

To achieve the best processing results possible with Poligrind, correct formulation of the application is required. DISCO's applications engineers will be happy to work with your workpiece and specifications to achieve the desired processing results.

When ordering

Please contact a DISCO representative with your product needs such as type, wheel size, and quantity.

When you place the first order with us, please explain application information such as materials to grind, sizes, machine, type, and other specification.

We are ready to help you to determine which is our most appropriate product type for your application.

Due to improvements in our products, it is possible that product specifications may be changed without advanced notice. Please confirm the product specifications with a DISCO representative.

⚠ To use these DISCO blades and wheels (hereafter precision tooling) safely... Please read carefully and follow the instructions below to prevent any accidents or injuries.

- USE a safety cover (nozzle case, cover), equipped as a standard accessory, to avoid injury.
- DO NOT EXCEED the specified rpm limit indicated on the precision tooling.
- FOLLOW the instruction manual of the equipment to mount the precision tooling properly.
- DO NOT DROP OR HIT the precision tooling. This may cause breakage or injury.
- Always CHECK the precision tooling for chipping or any other damage before starting to use it. DO NOT USE the tooling if there is any damage.
- READ the operation manual of the cutting/grinding equipment before use.
- DO NOT USE the precision tooling with modified or customized equipment.
- DO NOT USE precision tooling that has a different size from the one recommended for your equipment.
- DO NOT USE the precision tooling for any other purpose than grinding, cutting, or polishing.
- Always USE water or coolant to prevent precision tooling damage.



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