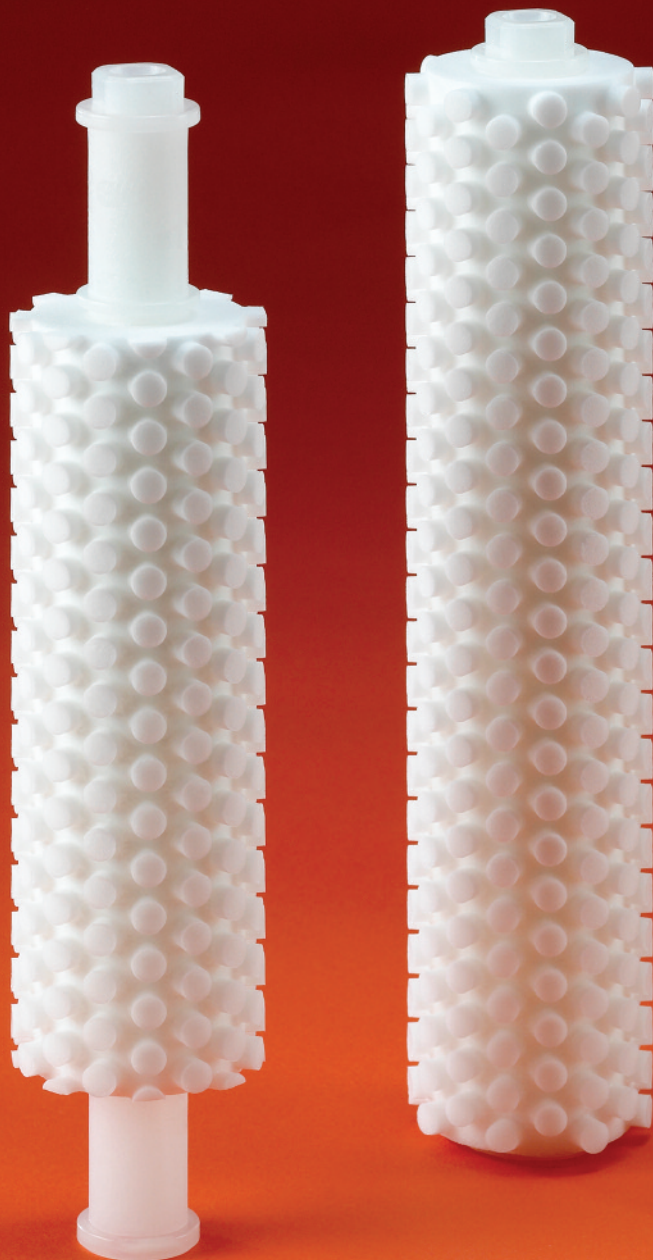




**PLANARCORE® PVA BRUSHES WITH
MOLDED POLYPROPYLENE CORE**

*Rapid changeout and high performance for
the most critical post CMP clean applications*



rapid changeout and high performance

Overview

Planarcore® PVA brushes with molded polypropylene (PP) disposable cores are designed to deliver superior performance and wafer-to-wafer uniformity in post CMP wafer cleaning applications. The unique *molded-through-the-core* technology provides absolute adhesion of the PVA (polyvinyl alcohol) to the polypropylene brush core, unlike standard PVA products that are merely friction fitted to the core. The dimensional stability of disposable Planarcore PVA brushes also eliminates the uncertainty associated with stand-alone and pre-mounted PVA products. PVA slippage, expansion and loss of concentricity are no longer a concern with the superior performance of Planarcore PVA brushes from Entegris.

Reduces Downtime on Tool

Molded-through-the-core technology guarantees a perfect fit every time. No operator errors or

inconsistencies to worry about. Gapping is quicker and easier, as the dimensional stability and concentricity from brush to brush do not waver. From first wafer to last wafer, the Planarcore brush and gap remain the same, ensuring process stability.

Efficient cleaning processes in Planarcore brush manufacturing reduce fab-based flush-up and brush break-in times. Quicker CMP tool startup benefits throughput.

Decreases Defectivity on Wafer

Reduced particle counts on wafer are the result of cleaner PVA, dimensional consistency and flow equalization, which combine to deliver the most consistent performance wafer-to-wafer in the industry.

| Features | Benefits |
|--------------------------------------|--|
| Molded-through-the-core construction | <p>Allows rapid and consistent installation on tools, reducing system downtime.</p> <p>Eliminates alignment and gapping problems, increasing system throughput.</p> <p>PVA remains dimensionally stable due to the molded-through-the-core technology. Will not lose concentricity during use.</p> |
| High-purity PVA | <p>Molded-through-the-core construction allows for more efficient cleaning of PVA in manufacture.</p> <p>Brush break-in and flush-up time is dramatically reduced.</p> <p>Low extractables and reduced particle counts on wafers.</p> |
| Close molded technology | <p>The Planarcore brush design equilibrates flow through the brush, eliminating the risk of non-repeatable and non-predictable performance due to inconsistent flow rates through the length of the brush, as seen in standard designs.</p> |

Specifications

| | | | |
|------------------------------|------------------------------|--|------------------------------|
| Materials of construction: | Core/mandrel | All polypropylene construction | |
| | Brush | Polyvinyl alcohol (PVA) | |
| | Preservative | 0.5% H ₂ O ₂ or NH ₄ OH | |
| Product cleanliness:* | Fluoride | F ⁻ | <0.50 ppm (part-per-million) |
| | Chloride | Cl ⁻ | <0.75 ppm |
| | Nitrate | NO ₃ ⁻ | <0.50 ppm |
| | Phosphate | PO ₄ ³⁻ | <0.50 ppm |
| | Sulfate | SO ₄ ²⁻ | <0.50 ppm |
| | Lithium | Li ⁺ | <0.10 ppm |
| | Sodium | Na ⁺ | <0.50 ppm |
| | Potassium | K ⁺ | <0.80 ppm |
| | Magnesium | Mg ²⁺ | <0.20 ppm |
| | Calcium | Ca ²⁺ | <0.50 ppm |
| | Dimensions: | Outside diameter** | 70 mm ±1.0 mm |
| Concentricity** | | <0.76 mm (0.03") | |
| PVA typical characteristics: | 30% compressive stress** | 90 g/cm ² | |
| | Porosity*** | 87-91% | |
| | DI water absorption capacity | 700-1100 wt % | |
| | Pore size | 70-250 µm (via SEM) | |

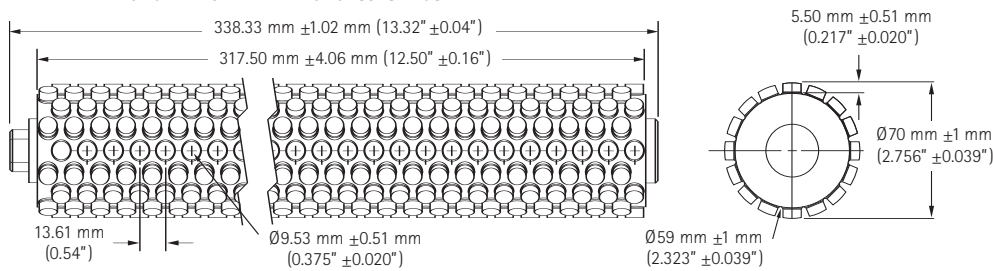
*Full Planarcore brush (including core) is submerged in 1 L of 18M Ω DI water and squeezed to ensure good distribution of any potential contamination. Residual DI water is then extracted by ion chromatography.

**These parameters are specified on the Certificate of Analysis for each product.

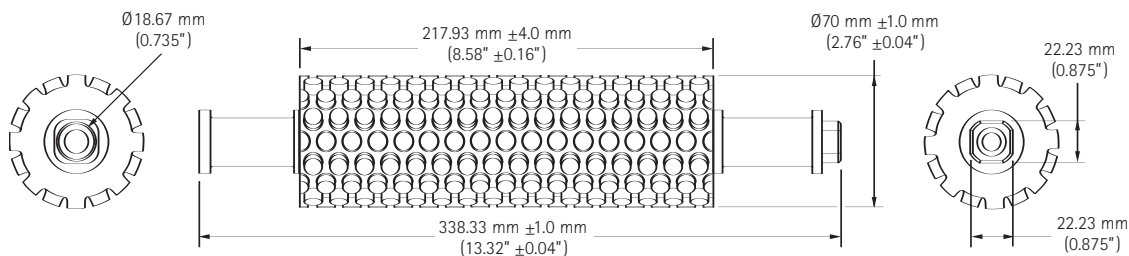
***Typical porosity is reported for the nodule area.

Dimensions

PVP1ARXR1 and PVP0ARXR1 Planarcore Brush



PVP1AMMR1 and PVP0AMMR1 Planarcore Brush



Ordering Information

| Part Number | Description |
|-------------|--|
| PVP1ARXR1 | Planarcore AMAT™ Reflexion® PP-core, H ₂ O ₂ |
| PVP1AMMR1 | Planarcore AMAT Mirra Mesa® PP-core, H ₂ O ₂ |
| PVPOARXR1 | Planarcore AMAT Reflexion PP-core, NH ₄ OH |
| PVPOAMMR1 | Planarcore AMAT Mirra Mesa PP-core, NH ₄ OH |

For More Information

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