PRODUCT GUIDE

post-CMP equipment consumables
PVA brush

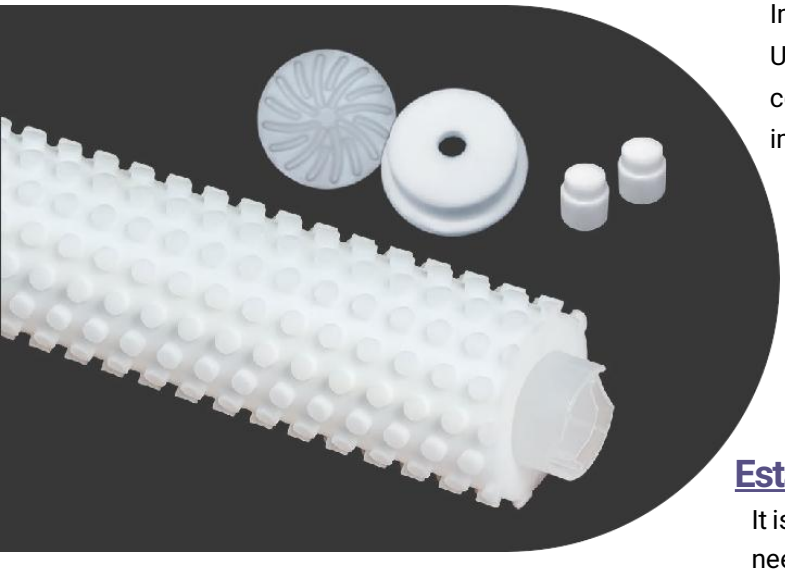
Purience

SK hynix 사내벤처 HiGarage

PURIENCE_PVA BRUSH

Optimal solution to control the wafer contamination

INTRODUCTION



Semiconductors : Cleanliness is important!

Impurities are not acceptable in the semiconductor industry. Using the functional PVA brush is essential for preventing contamination defects after the CMP process and improving yield.

PURIENCE's Functional PVA brush

We develop highly clean brush that eliminate organic impurities and next-generation brush designed to control metal contamination. We supply core-body integrated products that meet the stric standards required for ultrafine processes.

Establishing a stable supply system!

It is possible to accurately understand the customer's specific needs for improving semiconductor quality and yield and promptly address issues locally.

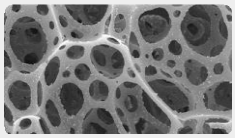
APPLICATION

Feature PVA brush is very hydrophilic and the pores are inter-connected.

No generation of dust

Absorbs up to 12~18 times its dry weight

Highly resistant to chemicals (acids, bases, and organic solvents)



Pores are interconnected

- Rigid when dry, soft when wet
- Non-linting and non-scratching
- Resistant to sunlight and UV rays
- Easily controlled pore size and shape
- Mechanically strong, abrasion resistant
- Heat resistance to 80 °C in wet condition

Application They are used for a variety of purposes in the industries including semiconductors, displays, and advanced sectors.

Semiconductor | Display | Advanced tech. | Medical

- **Semiconductor**
  - p-CMP : FEoL, MoL, BEoL, packaging
  - Photomask cleaning, Substrate reclaim
- **Display**
- **Advanced technology**
  - Critical Thinfilm (Nano coating, Smart glass)
  - Micro Sensor (Wearable, Micro fluidic)
- **Medical**
  - Blood absorption, Device cleaning

BRUSH LIST

Tailoring products to meet the needs of individual customers

8inch PVA brush

Product code	Product name	Specification
TC70-MA31-H218	PURIENCE_70-31_BRUSH_AMAT	70*31*218
TC60-UN32-H254	PURIENCE_60-32_BRUSH_UNIPLA	60*32*254
TC60-UN32-H254-P	PURIENCE_60-32_BRUSH_UNIPLA_P	60*32*254
TC60-OD32-H254	PURIENCE_60-32_BRUSH_ONTRAK	60*32*254
TC60-ON32-H241-P	PURIENCE_60-32_BRUSH_ONTRAK_P	60*32*241
TC38-FR18-H218	PURIENCE_38-18_BRUSH_EBARA	38*18*218
TC38-EP18-H218	PURIENCE_38-18_BRUSH_EBARA0	38*18*218

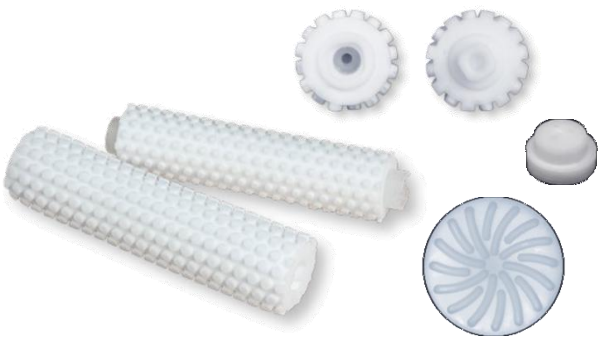
12inch PVA brush

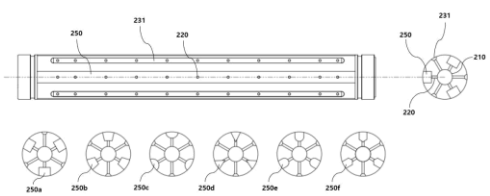
Product code	Product name	Specification
TC70-MA31-H318	PURIENCE_300A_CONNECTED_BRUSH_AMAT	70*31*318
TC60-FX32-H309	PURIENCE_300A_PRE-MOUNTED_BRUSH_EBARA-X	60*32*309
TC38-FS18-H309	PURIENCE_300A_PRE-MOUNTED_BRUSH_EBARA-S2	60*32*309

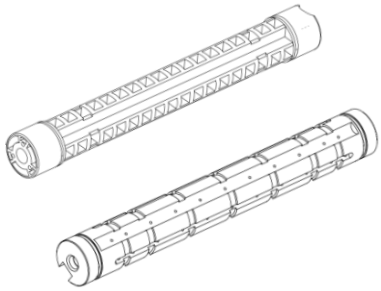
Core Highlights

- Strip structure for **anti-slip and moisture uniformity**
- Pit design to **prevent idle rotation and twisting**

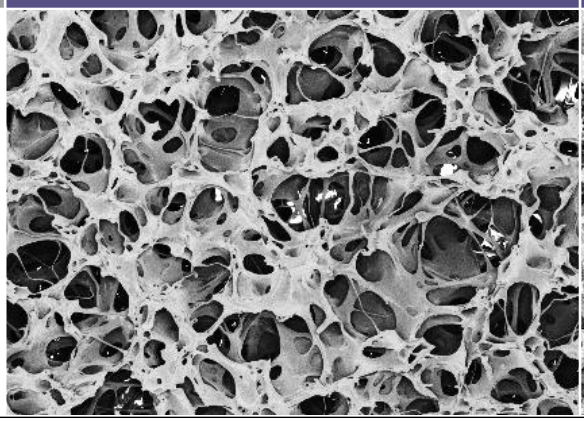
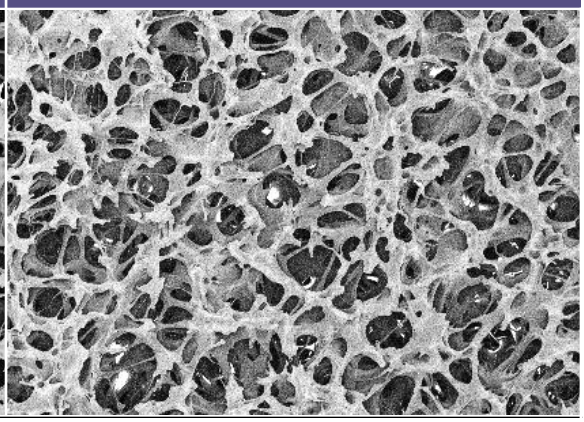
※ Integrated core-brush structure for **enhanced cleaning**



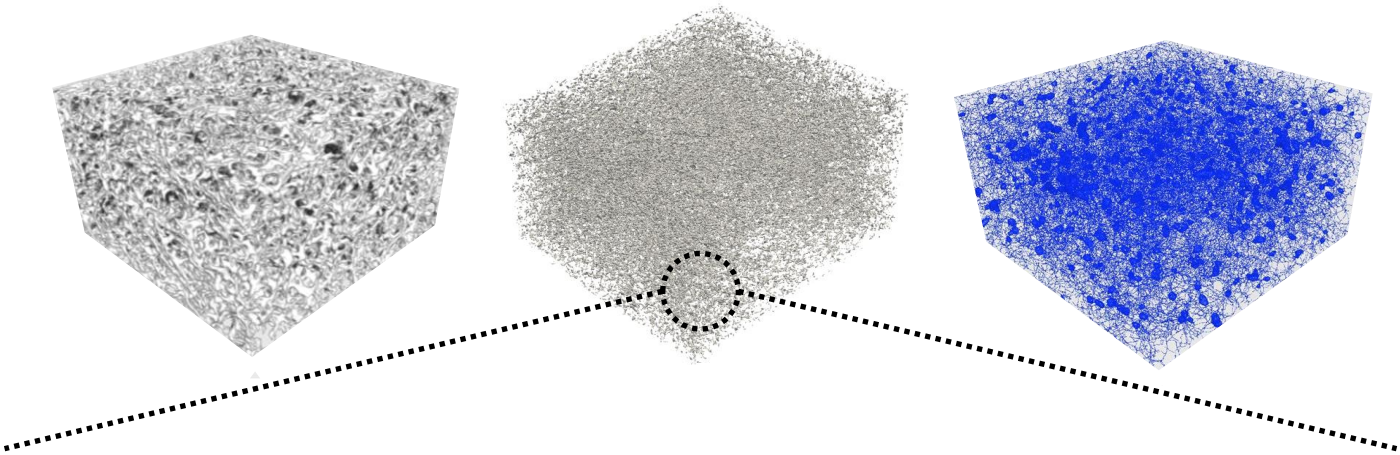


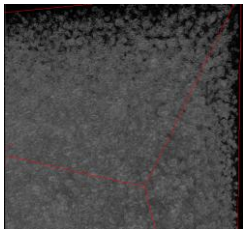


PHYSICAL PROPERTY

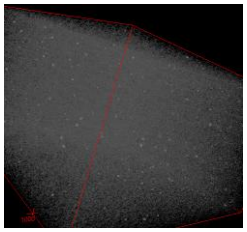
Specification	200mm (8inch)	300mm (12inch)
Image		
30% compressive stress (gf/cm^2)	120~140gf/cm^2	90~110gf/cm^2
Median pore size (μm)	60~80um	70~120um
Porosity (%)	88-90%	90%
Water Absorption (%)	750-850%	800~1000%
Density (g/cm^3)	0.15~0.25g/cm^3	0.10~0.20g/cm^3

Advancing Microstructure Analysis

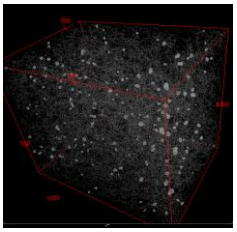




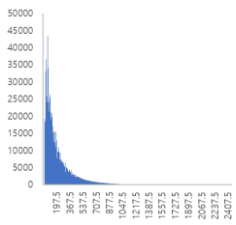
Open cell



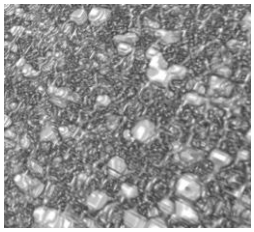
Closed cell



Impurity Analysis



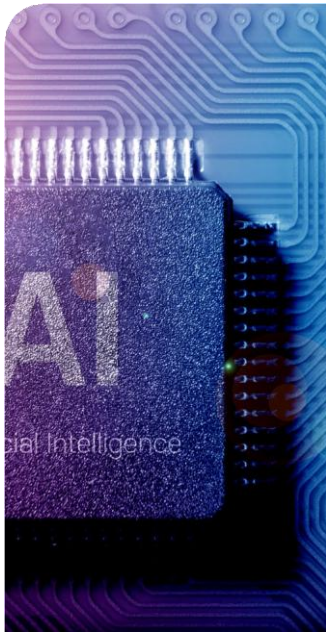
Pore Size and Distribution



Connectivity

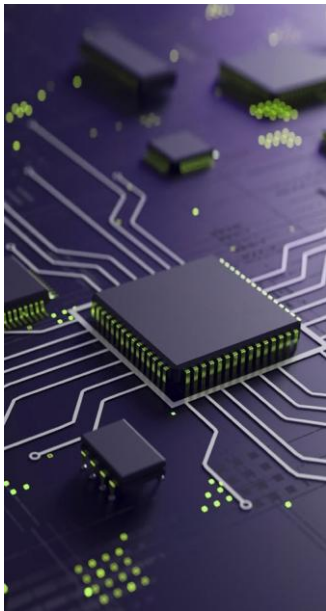
CHEMICAL RESISTANCE

Chemical	Concentration	Chemical	Concentration
Acetic acid	< 3%	Isopropanol	< 8%
Acetone	< 20%	Methyl ethyl ketone	< 10%
Ammonium hydroxide	< 20%	Methanol	< 20%
Citric acid	< 10%	Phosphoric acid	< 5%
EDTA	< 10%	Sodium hydroxide	< 5%
Ethanol	< 10%	Sulfuric acid	< 5%
Hydrochloric acid	< 3%	Tetrahydrofuran	Attacked
Hydrofluoric acid	< 5%	Xylene	Slight hardening
Hydrogen peroxide	< 5%		



CONTAMINATION

Ion	Concentration (ppb)	Metal	Concentration (ppb)
Br^-	< 0.5	Li	0.02
Cl^-	< 0.7	Na	0.02
F^-	< 0.5	K	0.02
NO_3^-	< 0.5	Mg	0.02
SO_4^{2-}	< 0.5	Ca	0.03
Na^+	< 0.5	Al	0.005
Li^+	< 0.2	Cu	0.005
K^+	< 0.5	W	0.005
Ca^{2+}	< 0.5	Cr	0.009
Mg^{2+}	< 0.2	Fe	0.009



www.puri-science.com

Building a Domestic and Global Semiconductor Ecosystem

Purience Co., Ltd. is a provider of functional components for the semiconductor industry.
We develop, manufacture, and supply PVA brushes for post-CMP semiconductor processes,
contributing to the localization of key components and the stabilization of the supply chain.
Through these efforts, we aim to play a vital role in strengthening Korea's semiconductor ecosystem.

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