

# TX5559

## HydroCell® Nodule Brush



Outer Dia.	=	38 mm
Inner Dia.	=	18 mm
Length	=	208 mm

### Features

- 100% synthetic polyvinyl acetal (PVA) construction
- Precision cast and cut
- Noncontaminating sterilant to control bacterial growth
- Full lot traceability
- Xclean™ processed
- Sterilized with H<sub>2</sub>O<sub>2</sub> or E-Beam
- Packaged in an ISO Class 5 cleanroom

### Benefits

- Consistent fit and function
- ISO-certified converting facilities with strict quality assurance protocols
- Xclean® processing for minimal ions and extractable residues
- Testing of eight physical parameters; apparent density, effective porosity, absorption capacity and speed, pore size, 30% compression, tensile strength and elongation
- O.E.M. tested

### Applications

- Media cleaning
- Post-CMP process cleaning
- Prime silicon wafer cleaning

### Description

ITW Rippey offers a broad variety of HydroCell® PVA-based products for substrate cleaning in the semiconductor and rigid disk industries. Our experience in providing critical contamination control products for these industries has enabled us to develop a family of superbly clean, highly durable, precision PVA brushes for removing process contaminants from wafers and disk media.

### Quality

ITW Rippey has consistently set the standard in the use of test methods to ensure the quality, cleanliness and consistency of the products it manufactures for contamination control and critical cleaning. We bring that expertise to our PVA brushes with our unique Test Method 17: *Physical Properties of Open-Cell Foam Roller Brushes*. ITW Rippey also performs chromatography testing to verify and ensure that the cleanliness of its PVA brushes conform to strict specifications. These test results have been verified by an independent testing lab.

### Performance Characteristics

Property	Typical Value	Test Method
Apparent Density	0.12g/cm <sup>3</sup>	TM17
Effective Porosity	89%	TM17
Equivalent Pore Diameter	528 µm	TM17
30% Compressive Strength	71.5 g/cm <sup>2</sup>	TM17
Tensile Strength at Break		
Elongation	608.9%	TM17
Strength	5.7 kg/cm <sup>2</sup>	TM17
Absorption (DIW)		
Capacity	852%	TM17
Speed	13.2 sec/cm	TM17

### Chemical Resistance at Ambient Temperature

Acetic Acid < 3%	Hydrogen Peroxide <5%
Acetone <20%	Isopropanol <8%
Alkali <5%	Methanol <20%
Ammonium Hydroxide <10%	Methyl Ethyl Ketone (MEK) <10%
Benzene**	Phosphoric Acid <5%
Citric Acid <10%	Sodium Hydroxide <3%
EDTA <10%	Sulfuric Acid <5%
Ethanol <10%	Tetrahydrofuran – Not Suitable
Ethers** – Suitable	Tetramethylammonium Hydroxide <2%
Ethyl Acetate**	Toluene**
Freon**	Trichloroethane**
Hydrochloric Acid <2%	Xylene – Not Suitable
Hydrofluoric Acid <5%	

**Note:** The data in this table represent typical analyses of these brushes at the time of publication. These are not specifications. ITW Rippey continually refines both its processes and its products.

\*\* Will not attack PVA but is not compatible with wet PVA due to immiscibility with water.

# ITW RIPPEY®

**ITW Rippey**  
5000 Hillside Circle  
El Dorado Hills, CA 95762  
Tel 916.939.4332  
Fax 916.939.4338  
[www.rippley.com](http://www.rippley.com)

**ITW Rippey**  
Southeast Asia Facility  
Singapore  
Tel 65.6468.9433 ext 117  
Fax 65.468.6772

**ITW Rippey**  
European Office  
Munich  
Tel +49 89 95 99 87 00  
Fax +49 89 95 99 87 01