

Avalon® 56 HP

High Purity Plastic Components for Wet Applications

Greene Tweed offers precision plastic components designed for a variety of demanding semiconductor applications. Avalon® 56 HP, a high-performance, plastic-based thermoplastic on the latest generation modified PTFE, is ideal for improving the performance of wet wafer processing systems that require exceptional chemical resistance and very low extractable levels. In addition, Avalon® 56 HP provides a very high level of purity, a wide temperature operating range, and superior low friction and dielectric properties.



Typical Properties

Physical Properties	Typical
Color	White
Specific Gravity	2.18
Melt Point (Powder), °F (°C)	626 (330)
Mechanical Properties	
Tensile Strength, psi	5000
Elongation, %	450
Flexural 0.5% Secant Modulus, psi	80,000
Coefficient of Thermal Expansion, <300°F (149°C), inch/inch per °F x 10 ⁻⁵	5.5
Coefficient of Static Friction @ 33.3 psi and 150 fpm	0.05
Coefficient of Dynamic Friction PV=5000 psi ft/min.	0.08
Wear Factor, in. ³ -min/lb-ft-hr x 10 ⁻¹⁰	2500
Permanent Deformation Under Load, 2000 psi @ 78°F (26°C), %	3.2
Shear Strength @ 80°F (27°C), psi	2400
Shear Strength @ 400°F (204°C), psi	1350

Features & Benefits

- Lower void content, less porosity, and minimal permeability compared to standard PTFE
- Reduced cold flow resulting in longer service life compared to standard PTFE
- Extremely low extractable levels
- Precision components available in a variety of configurations
- Lower cost of ownership and higher yields

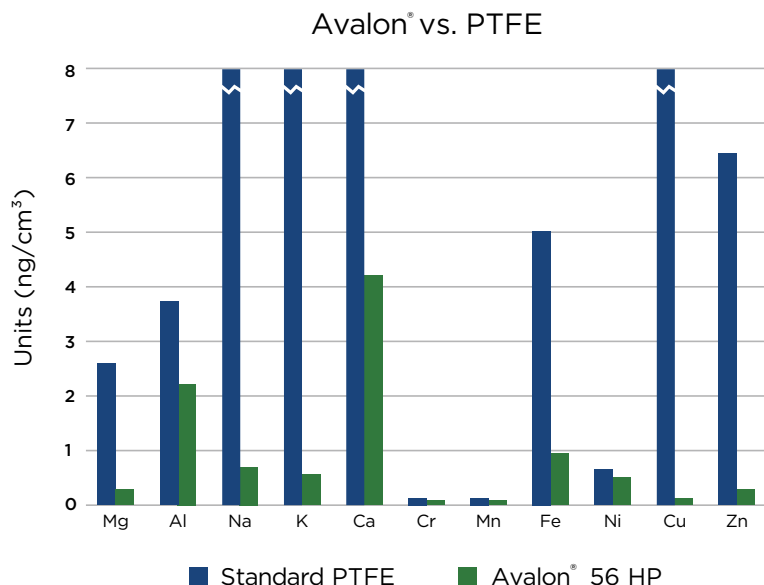
Applications

- Valve and pump components
- Manifolds
- Wafer carriers
- Fittings
- MSE® seals
- Low-friction slide rails

Avalon® 56 HP

Extractables Comparison

Elements	Avalon® 56 HP (ng/cm ³)	Standard PTFE (ng/cm ³)
Mg	0.28	2.58
Al	2.20	3.73
Na	0.67	18.10
K	0.55	18.40
Ca	4.18	21.90
Cr	0.02	0.085
Mn	0.06	0.098
Fe	0.96	5.04
Ni	< 0.50	0.63
Cu	0.09	21.40
Zn	0.28	6.43

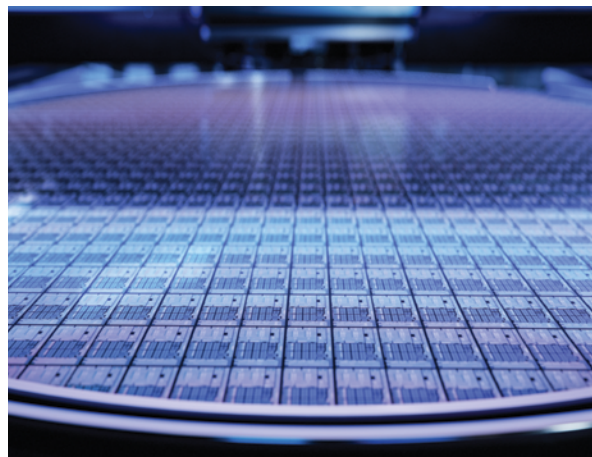


Test conducted with 2% HNO₃ for 2 days @ 68°F (20°C).

Contact Us!

With over 200 engineers working throughout North America, Europe, and Asia, Greene Tweed delivers exceptional responsiveness to our customers around the world.

From design through manufacture, we are committed to delivering innovative and customized material solutions that drive your technological advances. And with our vast network of technical and manufacturing resources, we have the support you require for your most critical applications. Please contact your local Greene Tweed representative for more information about our comprehensive elastomer and thermoplastic offerings.



Greene Tweed

1684 South Broad Street, Lansdale, PA 19446 USA | Phone: (+1) (215) 256-9521

gtweed.com

Statements and recommendations in this publication are based on our experience and knowledge of typical applications of this product and shall not constitute a guarantee of performance nor modify or alter our standard warranty applicable to such products.

© 2024, Greene Tweed all rights reserved. All trademarks are property of their respective owners. 08/24-GT BR-US-SSY-AV56HP-004