



GUARDIAN™ HP AND HPX CARTRIDGE FILTERS

For use with HF, BOE, NH₄F, and photoresist residue removers; copper plating solution, DI water

Overview

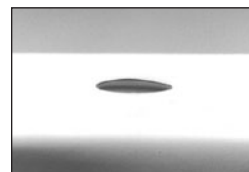
Guardian™ HP and HPX cartridge filters provide excellent retention efficiency and low particle counts in chemical delivery systems that provide fluids critical to semiconductor cleaning and wet etching, including HF, BOE, NH₄F, copper plating solution and etch.

Improved Equipment Efficiency, Reduced Maintenance, Fast Start-up

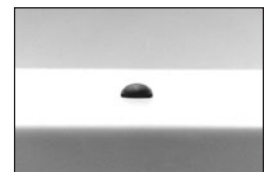
The Guardian HP and HPX cartridges arrive ready-to-use for maximum system uptime. The patented hydrophilic membrane (UPE) requires no prewetting for operation in aqueous solutions, no flushing, and does not dewet in aqueous solutions. The cartridges deliver quick flush uptime and excellent flow/retention characteristics.

Superior Cleanliness, High Flow

The Guardian HP and HPX cartridges' large surface areas provide high particle retention without sacrificing flow. The filters are rigorously flushed and cleaned during the manufacturing process to ensure an ultra-clean product that meets the demands of today's critical semiconductor processes.



Aqueous chemicals instantly wet Guardian hydrophilic UPE membrane



PTFE membrane resists instantaneous wetting

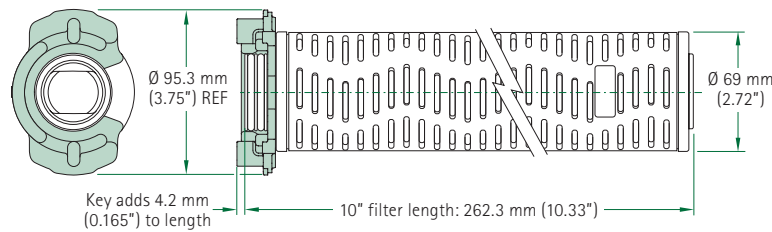
Features	Benefits
Hydrophilic, patented UPE membrane	Eliminates prewetting and flushing. Saves time at changeout, increases equipment uptime, and provides better, more consistent performance.
Multifunctional membrane with the ability to eliminate ions and particles	Eliminates trace levels of ions and improves quality of ultrapure water. Decreases metal contamination on wafer, and reduces waste. Removes particles with greater than 99.9% efficiency at stated retention rating.
Available in retention ratings of 0.05 µm, 0.1 µm and 0.2 µm	Excellent small particle retention: ensures minimal particles on wafer.
High membrane-area cartridge, with low pressure drop across the membrane	High flow and efficient particle removal: ensures rapid particle removal in one-pass and recirculating applications.
All-polyethylene construction	Provides excellent chemical compatibility, long lifetime, reduced changeout and system startup times.
Available in 4", 10", 20" and 30" cartridge sizes	Designed to fit the flow and process needs and space constraints for a wide variety of customers and original equipment manufacturing (OEM) suppliers.

Specifications

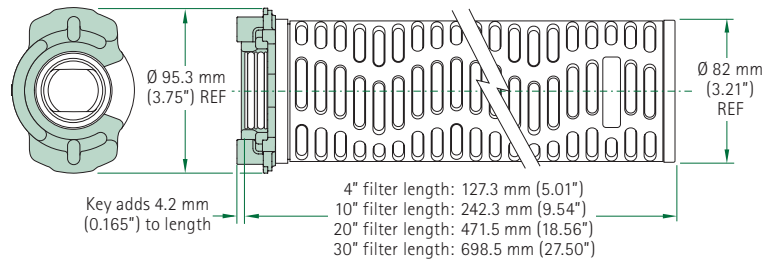
Type		HP	HPX
Materials:	Membrane	Patented hydrophilic ultra-high molecular weight polyethylene (UPE)	
	Supports, sleeve, core, end caps	Nonwoven high-density polyethylene (HDPE)	
	Code O double 2-222 o-rings	Teflon® encapsulated Viton® (TEV)	
Retention rating:		0.2, 0.1, 0.05 µm	
Membrane surface area:		10": 0.85 m ²	4": 0.5 m ²
		20": 1.7 m ²	10": 1.1 m ²
			20": 2.2 m ²
			30": 3.3 m ²
Maximum operating conditions:	Maximum forward differential pressure	0.35 MPa (3.5 bar; 50 PSID) @ 25°C (77°F)	
	Maximum reverse differential pressure	0.35 MPa (3.5 bar; 50 PSID) @ 25°C (77°F)	
	Maximum operating temperature	60°C (140°F) at the above conditions	
Cleanliness:	<2 particles/mL >0.2 µm after 5-minute flush DI water @ 5 L/min		

Dimensions (Nominal)

Guardian HP Cartridge Filters

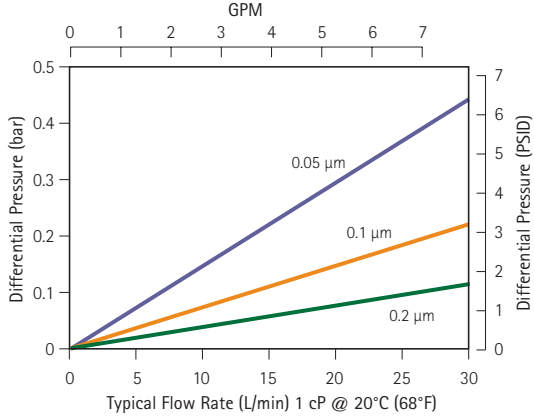


Guardian HPX Cartridge Filters

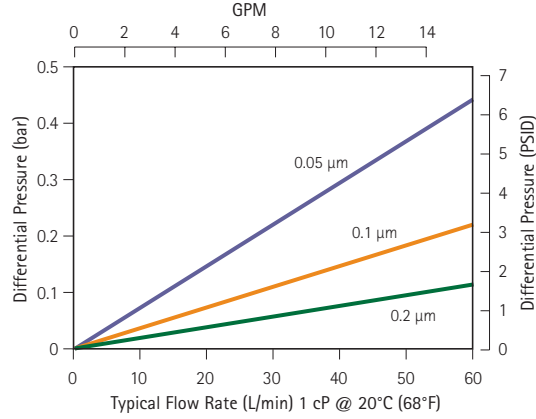


Performance Data

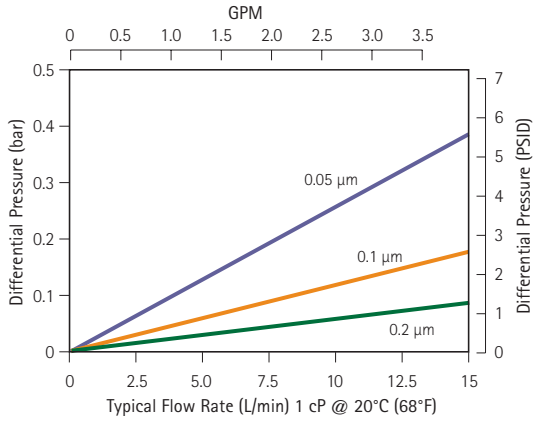
Guardian HP 10" Cartridges



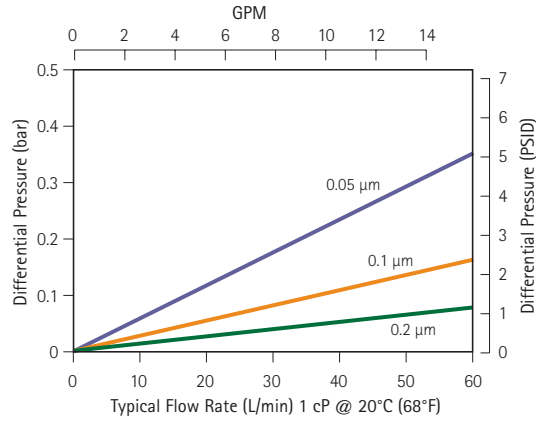
Guardian HP 20" Cartridges



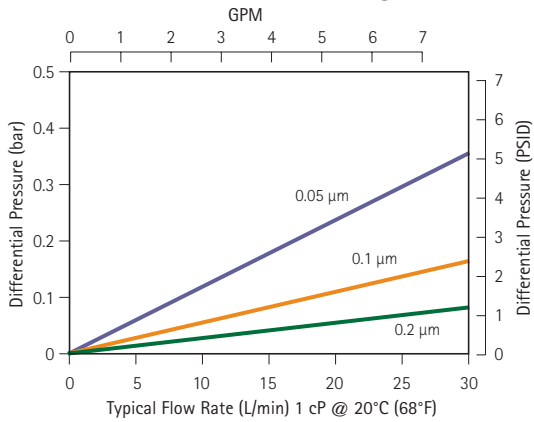
Guardian HPX 4" Cartridges



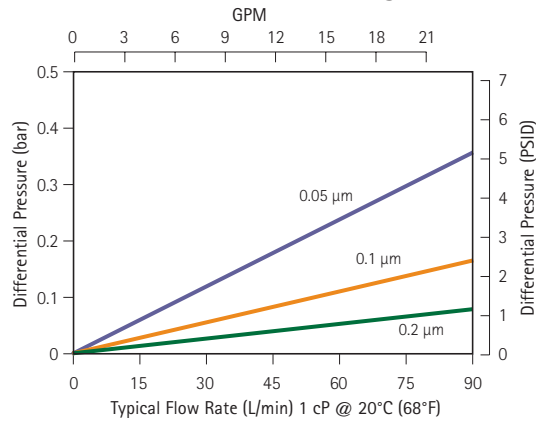
Guardian HPX 20" Cartridges



Guardian HPX 10" Cartridges



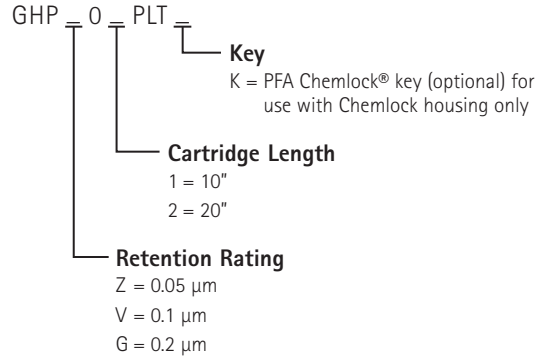
Guardian HPX 30" Cartridges



Ordering Information

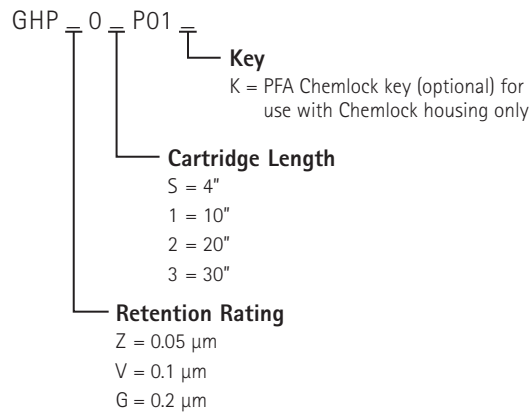
Guardian HP Cartridge Filters

Part Number



Guardian HPX Cartridge Filters

Part Number



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ENTEGRIS, INC.

Corporate Headquarters | 129 Concord Road | Billerica, MA 01821 USA
Customer Service Tel. +1 952 556 4181 | Customer Service Fax +1 952 556 8022
In North America 800 394 4083 | www.entegris.com