Positioned For The Next Challenge In Ultra-Pure Filtration

Mott provides all-metal filters for semiconductor processes, as well as state-of-the-art diffusers and innovative flow restrictor products. We offer the widest selection of all-metal filters for high purity applications. Alloy choices include 316L stainless steel, nickel and Hastelloy® C-22 construction to ensure chemical compatibility. Mott offers a full suite of products and it offers custom design expertise to ensure the optimal solution for your semiconductor process.

Product Offering

- **In-Line Point-of-Use Filters (POU)** – GasShield®
  POU filters are available in over 20 standard designs and rated for flows up to 600 slpm and inlet pressure as high as 5000 psig.

- **IGS Filters** – Mott offers a full line of filter and flow restrictor products in designs compatible with the gas system interfaces in process tools, gas cabinets, and valve manifold box installations. Range of flow rates is 10 to 100 liters per minute.

- **GasShield® PENTA® POU Filters** – For high flow applications, Mott PENTA filters are constructed from our unique high-flow nickel media that combines true 9-log filtration with a high flow and low ΔP.

- **Utility Line Filters** – Mott utility line filters provide a high-strength, all-metal solution to filtration requirements inside the wafer fab where flows are typically below 1500 liters per minute.

- **Bulk Filters** – These filters are designed to accommodate flows from 1000 slpm to 25,000 slpm with 316L stainless steel or nickel filter elements. Additional bulk designs are available for applications involving higher pressures or highly corrosive gases.

- **Gasket Filters** – This compact filter design fits inside a ¼" face seal fitting and does not add length to the gas system. Standard rated flows are 1, 3, and 20 slpm.

- **Flow Restrictors** – Porous metal permanently affixed to standard fittings for reliable, affordable flow control, without the drawbacks of mass flow controllers, needle valves and calibrated orifices. Downstream flows range from 100 slpm to <1 x 10⁻⁶ sccm.

- **Gas Diffusers** – Mott diffusers evenly disperses purge gas to ensure a uniform and laminar flow of gas, eliminating turbulent disturbance of any particles in the EFEM, load lock, wafer transfer or process chamber.

> high purity products

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The Distinct Advantages of Using Mott Products

- **Uniform, high-precision porosity** – Strictly controlled pore sizes are the result of Mott’s patented NanoMetal® Media process.

- **Depth filtration** – The compacting and sintering process arranges pores randomly, creating a labyrinth of irregular paths which more effectively capture particles that enter the media.

- **No media migration** – “Solid-state diffusion bonding” holds filter media together at the molecular level, making it virtually inseparable, even under the harshest conditions.

- **High-temperature capabilities** – Mott all-metal construction withstands sustained temperatures as high as 450°C.

- **Corrosion resistance** – Mott filter elements constructed of corrosion-resistant alloys such as nickel and Hastelloy® C-22 withstand the harmful effects of corrosive gases like Hydrogen Bromide and Tungsten Hexafluoride.

- **Tolerance of high differential pressures** – Mott filters provide the highest level of protection, with point-of-use filters capable of enduring up to 5000 psig for special applications with a maximum ΔP of 1000 psid.

Ensuring the Best Performance, and Maximum Out-Of-Box Cleanliness

Every GasShield filter is manufactured, tested and packaged in a Class 100 clean room environment. Fully documented process steps are strictly followed under controlled conditions to keep out contaminants such as hydrocarbons, and reduce post-installation purge and dry-down times for increased productivity. Filters with as little as 10 ppb moisture are available.

Designs by Request – Creating New Mott Solutions

With dozens of GasShield configurations, there’s a very good chance Mott already has the solution you need. Yet it’s also possible that yours is an altogether new kind of challenge. If that’s the case, we’re more than happy to work with you.

Developing new products has been the cornerstone of Mott’s growth and success. Working side-by-side with customers, often applying porous metal where it’s never been applied before, has led to major advancements in controlling costs and increasing manufacturing efficiency. Mott has, for example, worked with specific customer requirements to create load lock chamber diffusers for their individual tools. So, if you don’t see what you need here, or in one of our catalogs, ask us.

If anyone can customize a porous metal solution to the task at hand, it’s Mott.