



NEWS RELEASE

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Entegris, Inc. Product Profiles SEMICON West 2009

For more information on any of the products below, please visit the Entegris at the W Hotel during the SEMICON West show, July 14-15, in San Francisco.

300 mm Prime Small-Lot FOUP

Entegris has introduced its 300 mm Prime small-lot FOUP to help optimize workflow and reduce cycle times in support of the 300 mm Prime initiative. The small-lot FOUP features advanced perimeter sealing technology that reduces particle contamination and simplifies door closure and opening, leading to greater load-port efficiency and reliability. In addition, users can stack three small-lot FOUPs in the same footprint as one existing 300 mm FOUP, saving valuable fab space and improving manufacturing efficiencies.

450 mm Wafer Carrier

Entegris has launched a new, beta 450 mm wafer carrier to permit early 450 mm equipment integration and wafer handling studies based on the latest 450 mm fab carrier SEMI standards. The new carrier is the latest addition to the Entegris line of wafer carriers and incorporates the company's materials science and engineering expertise. In addition to this launch, Entegris recently introduced a 450mm single wafer shipper and a 450 mm multiple wafer shipper (FOSB). Entegris' beta 450 mm FOSB, with ISTA-qualified secondary packaging system, permits successful shipments of 450 mm wafers worldwide.

Clarilite® Wafer

Entegris has recently launched the Clarilite® wafer, which is proven to reduce and control RH levels from ambient to very low moisture levels for a sustained period of time. The Clarilite wafer can be used in post-inert gas purge for critical process steps in 300 mm FOUPs, extending queue times during transport and storage. Additionally, the wafer can be used where moisture control is needed for in-process wafer shipments in 300 mm FOSBs. The wafer can be used with any wafer carrier and in any wafer slot.

CR8 Series of Standard and High Temperature Valves and Manifolds

Entegris now offers the CR8 series, which includes valves and valve manifolds for ultrapure chemical applications. This product line offers two-way pneumatic and manual valves, and manifolds for low to medium flow applications, with flow factors (Cv) ranging from two to four. The valves offer reliable performance and easy serviceability – with a footprint that is smaller than most half-inch valves.

CR8 series valves are tested to four million cycles to ensure reliability and reduce cost of ownership. The two-way pneumatic valve is available in a high temperature version, which can operate up to 180°C (356°F). These capabilities allow the CR8 series to solve a variety of critical issues within the fab such as purity, corrosion and high temperature application needs.

Using CR8 series valve manifolds, customers can reduce installation time and minimize connections within the fab, resulting in lower capital expenditures. Ideal for wet etch and clean (WEC) and low volume bulk chemical delivery applications, the entire valve line incorporates compact modular valve designs with high temperature capabilities at maximized Cv levels.

EUV Pod

Successful wafer fabrication using EUV (extreme ultra violet) technology requires several advancements to reticle carriers to ensure defect-free reticle handling. Entegris has collaborated with leading lithography equipment suppliers and industry organizations in the development of an EUV mask carrier capable of meeting these stringent requirements. The EUV pod from Entegris is a dual pod design having both an inner carrier and outer shell to maintain a contamination-free environment. In laboratory tests, the EUV pod was shown to provide defect-free protection of EUV reticles during shipping, storage, handling and vacuum-transferring operations with 40 nm SiO₂ equivalent particle sizes.

Asymmetric Nylon Photochemical Filters

Entegris' asymmetric nylon photochemical filters reduce wafer defects in the most advanced photolithography applications. The introduction of the first nylon membrane enables both optimum retention and maximum flow without sacrificing pressure drop and increased defect levels. At two times the performance of existing nylon filters, the improved flow rate eliminates the risks previously associated with using tighter nylon filtration. Twice as thick as standard nylon membranes, it enables improved gel retention performance at a 10 nm pore size for market-leading contamination control.

Available as Impact® for point-of-use and Microgard® for bulk applications, the nylon membrane joins the family of photochemical filters from Entegris.

SUPERSiC® Family of Silicon Carbides

The Entegris SUPERSiC® family of silicon carbides has been expanded to include material offerings for a variety of applications. SUPERSiC silicon carbide is now being qualified for different applications within the semiconductor industry, such as lithography, CMP and metrology, as well as markets outside of the industry, including optics, solar and military applications. The unique conversion process used to manufacture SUPERSiC allows for additional qualities than typically inherent in silicon carbide, including the ability to readily manufacture complex shapes, high purity of the graphite precursor and an ease of dimensional changes from one design revision to another.

To enable the penetration of SUPERSiC silicon carbide into these applications, Entegris has created a number of grades with different physical properties, which include the addition of coatings to seal off the porosity inherent in the converted base material, and impregnations that increase the density and performance characteristics of the base material. While each grade enhances some property and performance attributes, they maintain the inherent advantages of the conversion process.

Spectra™ FOUP Technology Advancements

Entegris has introduced several new enhancements to its Spectra™ FOUP product line. Fulfilling the need for higher performance in the fab, Spectra FOUPs offer a microenvironment with much lower risk of wafer contamination by airborne molecular contaminants, outgassing and particles.

New enhancements include:

- FM4911 Approved FOUP for reduced risk of fire and smoke propagation in the fab, along with greatly-reduced costs for insurance.
- New snorkel technology to allow for dramatic purge time reductions.
- The Clarilite® wafer, which fits in any wafer slot to absorb contaminants and moisture during storage, and assists in maintaining a clean microenvironment.
- New barrier materials that help prevent permeation of contaminants through the FOUP shell, allowing for longer queue times and increased yields.