



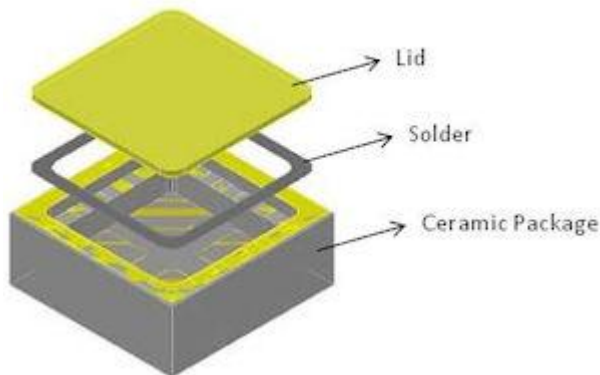
September 2012

Thin Film Deposition Materials & Electronic Packaging Products

Materion Nozzle Combo Lids™ - Novel Packaging Technology

A constant challenge in the Semiconductor industry is hermetic packaging. Following is an explanation of the importance of such packaging and how Materion has addressed this need for the sensor industry.

Conventional Combo-Lid



Why is hermetic packaging needed?

Every semiconductor chip that is fabricated should be properly packaged for long durability and performance. Sensor chips particularly need to be shielded from particles, gases and vapors that would interfere with the intended measurement. Therefore, proper hermetic packaging is essential to protect the device from contamination and increase reliability and ensure performance.

[Read More...](#)

New Wafer Scanner Improves Product Quality

Materion Microelectronics & Services, Buffalo, NY, has recently purchased a new wafer scanner to quantify results during performance testing. This is the same tool that our customers use to test their products, thus allowing us to mimic the process conditions that they employ in their laboratories. Dr. Alan Duckham, Senior Scientist, Buffalo, noted, "This equipment is amazing. In less than a minute, the tool can scan a six inch wafer, count and measure every defect and produce a detailed map. This will give us hard data that allows us to quantify performance and improve products for our customers."

In This Issue

[Nozzle Combo Lids](#)
[Wafer Scanner Addition](#)
[Precious Metal in Waste Streams](#)
[ICAP](#)
[Precision Parts Cleaning](#)



[Contact Us](#)

www.materion.com/microelectronics

Check Out Our New Webpages!

Materion Microelectronics & Services has gone live with our enhanced website for an improved user experience. The new webpages include expanded technical content and additions such as photos, links to Related Services, and convenient navigational features such as "Back-to-the-top," and "Contact Us."

Materion makes gold evaporation products to sell to the wireless and light-emitting diode (LED) industries. In electronics, a wafer (also called a substrate) is a thin slice of semiconductor material, such as silicon, gallium arsenide, or other technically demanding materials, used in the fabrication of integrated circuits and other electronic microdevices. These include traditional semiconductor devices that use silicon wafers, wireless power amplifiers that use gallium arsenide wafers, and LEDs that typically use gallium nitride on sapphire (or sometimes silicon carbide) wafers.

[Read More...](#)



(From left to right): Chuck Mead (MES), William Caron (Westford RDC team), Robert Sprague (Westford), Alan Duckham (MES), Lawrence Luke (Westford)

Precious Metals Recovered from Waste Streams

Materion owns and operates two state-of-the-art chemical and electrolytic refineries in the United States, strategically located in Buffalo, New York and Albuquerque, New Mexico as well as four collection facilities located in Ireland, China, Taiwan and Singapore. Specifically designed to handle complex production waste streams containing precious metals, our global operations can recover seven different precious metals (gold, silver, platinum, palladium, ruthenium, rhodium and iridium) from a wide variety of industries (wireless, led, medical, data storage, semiconductor, photo, solar, dental and jewelry).



materials. [Read More...](#)

If your challenge is salvaging precious metal content from your manufacturing by-products or scrap, our refining team can handle a broad range of materials. Some of the more common refining streams that Materion can process include: spent sputtering targets, chamber scrap / scrapings, foil, culls (wafers & fabricated components), impure bars / buttons, crucibles / boats, vacuum bags, filters, braze alloys, plating & etching solutions, sweeps material, bead blast media, jewelry, coins, dental alloys, medical & photographic films, mine dore and silver catalyst

[Visit Now!!!](#)

Silver - What's Happening in the Market?



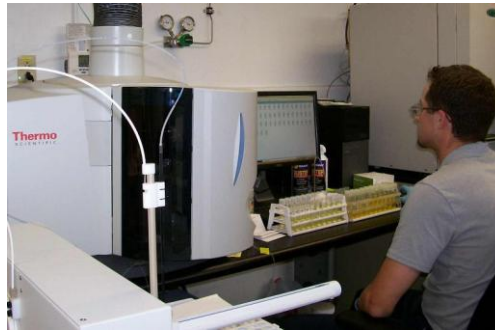
Silver is unique in that it is both an industrial commodity, consumer product and an investment vehicle. As such, its price is subject to market forces and is watched with interest by a variety of industries, consumers and investors. Currently, prices are being kept relatively low compared to some levels seen in the previous 18 months, largely because economies are still struggling and there is more supply than demand.

In considering the availability of silver, it may not be generally known that while $\frac{3}{4}$ of the supply comes from primary mine sources, the remaining $\frac{1}{4}$ is recovered from scrap refining. While both contribute to the silver supply stream, silver sourced from primary mines often is a by-product of base metal mining, such as copper. Silver sourced from scrap supply is generally impacted by market conditions.

[Read More...](#)

ICAP - Workhorse of Materion's Analytical Lab

When it is critical to accurately measure the concentration of the major components and trace elements in the hundreds of pure metals and alloys produced at Materion's Buffalo and Brewster, NY facility, ICAP is our tool of choice. The abbreviation stands for Inductively Coupled Atomic Plasma, which is a shorter version of the official name ICP-OES (Inductively Coupled Plasma-Optical Emission Spectrometer). It is a technique that is used for the chemical analysis of a variety of materials, and employed by Materion to provide an accurate determination of the precious metal content in a wide variety of our customer's reclaimed and refined materials.



ICAP or "ICP" analysis is probably the most useful technique available today for measuring chemical elements in a extensive range of substances that include minerals, metals, soils, agricultural and food products, biological fluids, motor oils and a multitude of environmental materials. It has the capability of quickly checking the concentration of up to 70 chemical elements in a single material sample of material. Another advantage of the ICP technique is its broad working range of up to six "orders of magnitude," which means that the concentration of the elements in a sample can be determined from less than 0.001% to nearly 100%.

[Read More...](#)

Materion Raises the Bar on Precision Parts Cleaning



Our Microelectronics & Services' group is already known as an industry leader for its advanced deposition and cleaning methods for thin film applications. However, in addition to the basics, we offer a range of ancillary services to supplement our parts cleaning and provide our customers a low cost of ownership model, longer effective part life and high precious metal recovery rates.

Materion utilizes novel parts cleaning techniques to successfully clean complex and challenging deposition materials from a variety of substrate materials ranging from metals, ceramics, quartz, graphite fiber and plastics. Our state-of-the-art facilities employ the latest advancements in the cleaning industry and are conveniently located on both US coasts and overseas.

[Read More...](#)

MATERION MICROELECTRONICS & SERVICES

2978 Main Street
Buffalo, NY 14214
Phone: +1 716.837.1000
www.materion.com/microelectronics

USA: +1 716.837.1000

Europe: +44 0 488.686056

Asia: +65 6559.4450



Face-to-Face Around Materion



From his home in Singapore, meet Ramesh Kothandapani, an Application Manager in the Materion Advanced Materials Group. Ramesh has been with Materion for 14 years and reports to Lee Chee Kong, Vice President of the Asia Pacific region.

As part of his responsibilities, Ramesh provides application support to meet in-house requirements and engages with customers to discuss new projects and introduce Materion products and services.

[Read More...](#)

