PVD Products

Materion offers a comprehensive line of thin film deposition products and related services. Our unique technological capabilities enable us to identify and develop best-cost solutions across a wide range of demanding markets.

Materion’s PVD Solutions

- Sputtering targets to meet all OEM configurations and designed for thin film performance
- Proprietary designs extend sputtering target life and reduce total cost
- Global bonding services provide seamless procurement and logistics
- High purity and low spitting evaporation materials maximize yield
- Full precision parts cleaning services available with local service and support
- Captive recovery and refining of spent sputtering targets, chamber depositions and other process-related scrap
- Full line of PVD consumables including Backing Plates and Crucible Liners
- Internal sputtering and evaporation capabilities for research and development

Sputtering Targets

Materion’s market leadership in sputtering targets is based on the innovative solutions it provides to customers. Active research and development efforts continuously improve upon standard target configurations to extend life and reduce precious metal cost.

- Targets are designed for optimal performance in thin film applications
- Manufacturing processes are developed and controlled to produce ideal purity, grain size, crystal orientation and homogeneity
- Repeatable film uniformity from first installation and ignition through end of target life
- Elemental and compound targets available in both metallic and nonmetallic materials, including cermets and ceramics
- Innovative manufacturing and analytical capabilities focus on casting and powder consolidation

Target Bonding

Materion maintains one of the largest internal networks of target bonding facilities in the world.

- Over 5000 targets are bonded annually
- 4 bonding facilities in USA, 3 in Asia and 1 in Europe
- Technologies include metallic solders, elastomer, epoxy and diffusion bonding
- Adhesion, diffusion and wetting layers are applied using sputtering and evaporation techniques
- Customized solutions available for specific material combinations or operating requirements
- Many production sites can certify bond integrity with nondestructive ultrasonic testing
Materion Microelectronics & Services supplies thin film deposition materials, electronic packaging products, high purity and specialty materials, precision parts cleaning, and precious metals refining to the semiconductor, LED, photonics, data storage, wireless, military, medical and other demanding markets.

Evaporation Materials
Materion provides high performance elemental and composite evaporation materials in a variety of forms and purities.
- Available for a wide range of applications, including the exacting, high purity requirements of wafer-based processes
- Proprietary EVAPro™ high purity, low spitting materials improve yields and tool up time
- Tested with the most advanced analytical techniques including GDMS, ICP-MS, and LECO

PVD Consumables
Backing plates are available to fit nearly all OEM designs
- Typical materials include copper and copper alloys, stainless steel and molybdenum
- Specific inspection criteria and lifetime tracking provided
- Repair and refurbishment services available to guarantee fitness for use

Materion crucible liners enhance evaporation, improve tool up time and protect hearth pockets.
- Matching the correct liner material with both the evaporation method and the process conditions is critical to the deposition process
- Preconditioning the crucible liner can improve yields and is available from Materion
- Recommendations and services are provided to Materion customers as needed

Related Services
Materion's engineering expertise in metal refining and precision parts cleaning enables customers to focus on their core business. With two of the largest and most efficient chemical and electrolytic refineries in North America and precision parts cleaning sites strategically located throughout the USA and Europe, Materion is the partner of choice for manufacturers seeking to gain a competitive advantage.

Technological and laboratory capabilities include film deposition by sputtering or evaporation. These methods are used for internal R&D and collaborative projects that help customers create sustainable market advantages by improving upon material performance, design characteristics or cost drivers.

Beyond Compliance
Our accreditations include:
- ISO 9001:2008 (for quality)
- ISO 14001:2004 (environmental & safety management systems)
- LeanSigma
Materion is a global advanced materials company, dedicated to providing solutions that enable our customers’ technologies and drive their growth. Our products include precious and non-precious specialty metals, precision optical filters, inorganic chemicals and powders, specialty coatings, specialty-engineered beryllium alloys, beryllium and beryllium composites, and engineered clad and plated metal systems. The Materion business is structured to enhance our ability to provide customers with innovative, best total-cost solutions.