Reclaim and Refining Services

The Challenge

Precious metals are often lost as a result of internal manufacturing processes, thus increasing the cost of production. Metals can adhere to chamber shields, or remain in cleaning solutions, or become by-products or scrap. The challenge is to recover the greatest amount of precious metal feasible; and to render it in the purest form. This requires technical capabilities that can both reclaim precious metal and refine it — in order to return high-purity metal that meets the customer’s requirements.

The Solution

Materion employs a comprehensive approach to reclaiming precious metal from the production waste stream, as well as refining the recovered metal.

- New techniques allow us to identify, collect, segregate & recover a wide variety of precious metal by-products
- Chamber shield cleaning for the most effective recovery of metal from shields as well as from chemical solutions
- Two of the largest state-of-the-art chemical and electrolytic refiners in North America
- Choice of multiple refining methods to increase metal recovery
- Refining outturn upgraded to high purity for customer’s use in products
- Specialized experts in precious metals materials management assist with metal recovery plans for improved profitability

BENEFITS

One-stop solution for precious metals management offers these advantages:

- Technical expertise based on 100 years of experience in refining, recycling and recovery
- Higher metal returns and fast settlements within the industry
- Ability to support full Mass Balance
- Returned metals tested to identify any trace elements using ICAP, GDMS & XRF
- Strategically located cleaning sites in the US and global recovery presence
- R&D team continuously exploring new methods to increase recovered value
KEY INDUSTRIES
We serve diverse industries that utilize precious metals in their production processes.
- Semiconductor
- LED
- Data Storage
- Wireless
- Medical
- Photographic
- Catalysis
- Semiconductor
- Sensing
- Photovoltaic
- Braze
- Industrial
- X-Ray
- Dental
- Photonics

PRECIOUS METAL REFINING
Multiple technologies and refining processes ensure that customers receive full recoverable value.

Refining Methods
- Blending
- Melting
- Incineration
- Screening/Sifting
- Milling
- Thermal Reduction
- Smelting
- Electrochemical refining
- Hydrometallurgical refining
- Electrochemical refining

RECOVERABLE MATERIALS
We can reclaim precious metals from a broad range of sources.
- Semiconductor and solar cell wafers
- Spent plating solutions
- Large area coating
- Sputtering targets
- Plating baths
- Industrial manufacturing
- Coated films and more

Types of Metals
- Gold
- Palladium
- Platinum
- Silver
- Rhodium
- Ruthenium
- Others

CHAMBER SHIELD CLEANING
Best-cost models can be obtained through use of our PVD materials & chamber shield cleaning services.
- Fullest possible recovery of precious metals from chemical cleaning solutions
- Lower equipment cost of ownership
- Variety of flexible settlement plans with fast turn-around for improved cash flow

ENVIRONMENTAL LEADERSHIP
All our disposal procedures comply or exceed State & Federal regulations. Certifications include:
- ISO 9001:2008 Quality Systems
- ISO 17025:2005 Analytical Laboratory
- ISO 14001:2004 Environmental Safety & Management Systems
- LeanSigma
- Dedicated Team of Experts
- Metallurgists
- Chemists
- Materials Scientists
- Processing/Application Engineers
- Microstructure & Material Property Analysis
- Precious Metal Determination

- Thin Film Deposition Materials
- Evaporation Materials
- Precious Metal Sputtering Targets
- Non-Precious Metal Sputtering Targets
- Microelectronic Packaging Materials
- Braze & Solder Alloys

- 100+ Years of Experience in Precious Metal Recovery & Refine
- Variety of Recovery Techniques
- Inventory Management
- Metal (Pool) Accounts
- Settlement Accuracy Database Manager
- Flexible Settlement Options

- On-Site Support
- Inventory & Fab Management
- Proprietary Chemical Cleaning & Degreasing
- Semiconductor Grade Final Packaging
- Advanced Surface Modification & Coatings

MATERION ADVANCED MATERIALS GROUP is a global advanced materials and services 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.