MATERION

ADVANCED MATERIALS

Evaporation Materials

Gambetti
Vacuum Technology and Related Solutions

Via A. Volta n. 27
20082 Binasco (Milano)
Tel. 39 02 90093082
Fax. 39 02 9052778
info@gambetti.it
www.gambetti.it
www.plasmi.eu

Evaporation Materials

The Challenge

Optimal evaporative performance for thin film deposition in demanding applications is highly dependent on the use of high purity materials specifically customized for PVD processes. It requires materials that feature low organic and inorganic impurities, as well as minimal surface contamination. Achieving this level of purity results in highly reproducible performance with low spit rates & defects to meet the exacting requirements of microelectronic, optical and medical manufacturing processes.

The Solution

Materion's thin film deposition materials can resolve your concerns for high purity, cleanliness, reproducibility and other challenges

- Ultra high purity EVAPro® grade materials provide industry leading high purity, low spit, stable deposition performance
- Manufacturing processes are rigorously monitored to ensure product reproducibility
- Availability of elemental & compound materials in a variety of forms and purities
- Choice of precious metals & alloys and non-precious metals & alloys

BENEFITS

With our technical expertise in thin film deposition, we provide these advantages:

- Improved yields
- Low organic and inorganic impurities
- Consistent quality and performance
- Crucible liners which provide enhanced evaporation processes, improved yield and reduced down time
- Technical capabilities to identify and develop best-cost solutions
- Knowledgeable applications support

ENVIRONMENTAL LEADERSHIP

All our disposal procedures comply with state & federal regulations. Certified:

- ISO 9001:2008 Quality Systems
- ISO 14001:2004 Environmental Safety & Management Systems
- ISO 17025:2005 Analytical Laboratory
- LeanSigma

Materion … Materials to Advance the World's Technologies

MATERION

PRECIOUS METAL & NON-PRECIOUS METAL EVAPORATION MATERIALS

- EVAPro® Grade – Materion's ultra high purity materials up to 99.999%
- Conflict-free metals
- Ultra low gaseous and non-metallic entrapments
- Consistent batch-to-batch material properties
- Tool-specific starter charges to eliminate the need for consolidation

SPECIALTY CERAMIC-INORGANIC EVAPORATION MATERIALS

- Tightly controlled chemistries and high purity materials
- Available in a variety of shapes and sizes
- Support any size operation from R&D to full scale production

AVAILABLE FORMS

- Slugs
- Pellets
- Grain
- Rods
- Wire
- Custom shapes
- Starter sources

RELATED SERVICES

Materion offers metal refining & vacuum chamber shield cleaning services.

- 100 years experience refining, recycling & recovery of metals
- Valuable materials reclaimed and refined to purest forms
- High yields and settlements
- Complete traceability
- Chemical cleaning for best-cost model
- Optimal metal recovery

EXAMPLES OF AVAILABLE MATERIALS

Precious Metals and Alloys

- Au*
- Ag
- Pt
- Pd*
- AuCu
- PtRh
- AuGe*
- AuSi
- AuAs
- AuSn
- AgAu
- AgPd
- AgCu

Non-Precious Metals and Alloys

- Ti*
- Ni*
- Al
- Ge
- Cu
- Mo
- Zr
- Cr
- Sn
- Si
- Be
- Sb
- Ta
- Pb
- As
- Th
- Mg
- Ga

Inorganic Chemicals

- Fluorides
- Carbides
- Oxides
- Hydrides
- Thorium
- Selenides
- Tellurides
- Sulfides
- Borides
- Arsenides
- Rare Earth Elements

*Available in EVAPro® grade

Element	Symbol	Atomic #	Atomic Weight (rounded)	Density g/cc	Melting Point °C	Boiling Point °C
Beryllium	Be	4	9.012	1.85	1278	2970
Boron	B	5	10.81	2.34	2079	2550
Magnesium	Mg	12	24.31	1.74	649	1090
Aluminum	Al	13	26.98	2.7	660	2467
Silicon	Si	14	28.09	2.33	1410	2355
Titanium	Ti	22	47.87	4.54	1660	3287
Chromium	Cr	24	52	7.19	1857	2672
Manganese	Mn	25	54.94	7.43	1244	1962
Iron	Fe	26	55.85	7.86	1535	2750
Cobalt	Co	27	58.93	8.9	1495	2870
Nickel	Ni	28	58.69	8.9	1453	2730
Copper	Cu	29	63.55	8.96	1083	2567
Zinc	Zn	30	65.41	7.13	420	906
Gallium	Ga	31	69.72	5.9	30	2403
Germanium	Ge	32	72.64	5.32	947	2830
Selenium	Se	34	78.96	4.79	217	685
Strontium	Sr	38	87.62	2.54	769	1384
Yttrium	Y	39	88.91	4.47	1523	3337
Zirconium	Zr	40	91.22	6.51	1852	4377
Molybdenum	Mo	42	95.94	10.2	2617	4612
Rhodium	Rh	45	102.9	12.4	1966	3727
Palladium	Pd	46	106.4	12	1554	3140
Silver	Ag	47	107.9	10.5	962	2212
Indium	In	49	114.8	7.31	157	2080
Tin	Sn	50	118.7	7.31	232	2270
Antimony	Sb	51	121.8	6.69	631	1950
Barium	Ba	56	137.3	3.5	725	1640
Cerium	Ce	58	140.1	6.66	798	3257
Neodymium	Nd	60	144.2	7	1016	3127
Samarium	Sm	62	150.4	7.52	1074	1794
Platinum	Pt	78	195.1	21.4	1772	3827
Gold	Au	79	197	19.3	1064	3080
Lead	Pb	82	207.2	11.4	327	1740

MATERION

ADVANCED MATERIALS
2978 Main Street
Buffalo, NY 14214 USA
Phone: +1 800.327.1355
advancedmaterials@materion.com
www.materion.com/advancedmaterials

Europe: +441 488.686056
Asia: +65 6559.4450

MATERION CORPORATION
www.materion.com

MATERION ADVANCED MATERIALS 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.