DATA SHEET

MATERION

ADVANCED MATERIALS

Silver (Ag)

Sputtering Targets for Glass & Photovoltaic Applications

DATA SHEET

Silver (Ag)
Rotatable Sputtering Targets for Glass & Photovoltaic Applications

Materion Advanced Materials, now expanded with the addition of the Heraeus target materials business, is the world's leading supplier of rotatable sputtering targets. Our ability to produce large silver targets is particularly suited for glass and photovoltaic applications. To achieve optimal results during the deposition process requires cylindrical silver targets that are capable of consistently producing uniform thin films that meet or exceed industry standards. Our rotatable sputtering targets are specifically developed to produce low defect films for large area coating operations with optimized target life time.

CAST TARGET FEATURES

High Purity

The use of high purity source material is key for the successful production of high quality thin films for low emissivity glass. State-of-the-art refining, manufacturing and analytical methods are used to produce and verify our target purities of 99.95% and 99.99%. Other purities are available upon request.

Low Oxygen

Our advanced refining techniques, precision casting and post-casting processes result in low oxygen target material which in turn yields low oxygen thin films that exhibit higher reflectance and electrical conductivity.

Fine Grain Size

Thin film uniformity is achieved by using targets with consistent small grain size. Grain size for Materion targets is typically <200 mm.

Materion … Materials to Advance the World's Technologies

SPRAYED TARGET FEATURES

An alternative to our cast targets is thermally sprayed cylindrical silver targets.

Advantages for Sprayed Rotary

- Low cost of ownership compared to cast rotary
- Faster line speed than planar

High Purity

Our sprayed targets are produced with the same high purity raw material as our cast targets with purities of 99.95% and 99.99%.

QUALITY ASSURANCE

Materion uses DIN EN ISO-9001:2008 certified procedures to guarantee the highest and most consistent product reliability. We strive for continuous process improvements using statistical process control. In addition to detailed specifications and sophisticated analytical method, our employees are dedicated to the highest quality standards.

BENEFITS

- Special target geometry provides greater material utilization
- Longer target life time reduces downtime for changeouts & chamber maintenance
- Target material of extremely high homogeneity
- High purity silver (3N7) with optimized microstructure
- Optimum grain size
- Custom designed special geometries available
- Single sleeve bonded and monolithic versions available
- Silver targets can be fully recycled after consumption

TECHNICAL DATA		
Application	IR reflective layer, low e and solar control glass coating, TFPV (reflector and collector)	
Material	Silver (Ag)	
Composition	Pure	
Melting Point	960°C	
Thermal Conductivity	420 W/m·K	
Electrical Resistivity	1.6	
Thermal Expansion Coefficient [K^{-1}]	20.10^{-5}	
Production Method	**Cast Hard-Worked**	**Thermally Sprayed**
Purity	3N7	3N7
Oxygen Content (typical)	<100ppm	<600ppm
Grain Size	<200 µm	<100µm
Maximum Length	4m	4m
Thickness	OD 160mm (others on request)	OD 160mm (others on request)
Dogbone	On Request	On request
Version	Monolithic or bonded	Sprayed directly on backing tube
Density	10.49 g/cm³ (100% theoretical density)	Ca,9.96 g/cm³ (95% theoretical density)
Recyclable	Yes	Yes

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ADVANCED MATERIALS

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MATERION CORPORATION
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MATERION ADVANCED MATERIALS, now expanded with the addition of the Heraeus target materials business, is the world's leading supplier of sputtering targets for large area coatings. To achieve optimal results during the deposition process, sputtering targets must be capable of consistently producing uniform thin films. This requires the highest quality materials that meet or exceed industry standards. Our high purity sputtering targets are specifically developed to produce low defect and high performance thin films.