

Silver (Ag)

Rotatable Sputtering Targets for Glass & Photovoltaic Applications

Materion is one of the world's leading suppliers of rotatable sputtering targets. Our ability to produce large silver targets is well suited for glass and photovoltaic applications. Achieving optimal results during the deposition process requires cylindrical silver (Ag) targets capable of consistently producing uniform thin films to meet or exceed industry standards. Our rotatable sputtering targets are developed to produce low defect films for large area coating operations.

Benefits

- Special target geometry provides greater material utilization
- Longer target life time reduces downtime for changeouts and 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

Cast Target Features

High Purity

The use of high-purity source material is critical to the successful production of high-quality thin films for low emissivity glass. Materion employs advanced refining, manufacturing and analytical methods to produce and verify 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 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 nm.

Quality Assurance

Materion uses ISO 9001:2015 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.



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 targets
- Faster line speed than planar targets

High Purity

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

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 μ m	<100 μ m
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/cm ³ (100% theoretical density)	Ca, 9.96 g/cm ³ (95% theoretical density)
Recyclable	Yes	Yes

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