

## Niobium Oxide (NbOx)<sup>TM</sup>

### Rotatable Sputtering Targets for Glass & Display Applications



Materion is a leading supplier of rotatable sputtering targets. Our target products for Niobium Oxide (NbOx) coatings are particularly suited for glass and display applications. Achieving optimal results during the deposition process requires cylindrical 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.

### Benefits

- Longer target life time reduces downtime for changeouts and chamber maintenance
- Increased material utilization
- Pure NbOx with optimized microstructure for best homogeneity and sputtering performance on full target volume
- Custom designed special geometries available

### Technical Data

Application	blocker layer, dielectric layer, TCO
Production Method	Thermal spray
Material/Composition	Pure NbOx
Purity	2N6 (Glass); 3N (Display)
Max Length/Max segment size	4 m
Thickness	6 mm*
Bonding/Version	No bonding
Melting Point	ca. 1500° C
Thermal Conductivity	ca. 2.5 W/m • K
Density	≥ 4.9 g/cm <sup>3</sup>
Electrical Resistivity	< 0.3 Ω cm
Thermal Expansion Coefficient	ca. 5 · 10 <sup>-4</sup> K <sup>-1</sup>
Sputter Rate	ca. 40nm · m/min @ 10kW/m DC mode
Recommended Sputter Power	10 kW/m DC mode
Microstructure	< 100 μm
Stoichiometry	Nb <sub>2</sub> O <sub>4.7</sub>

\*Other thicknesses available on request

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