



**MATERION**



**ADVANCED MATERIALS**

Niobium Oxide  
(NbOx)<sup>™</sup>

Rotatable Sputtering  
Targets for Glass &  
Display Applications

# Niobium Oxide (NbOx)

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 target products for NbOx coatings are particularly suited for glass and display applications. To achieve 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.

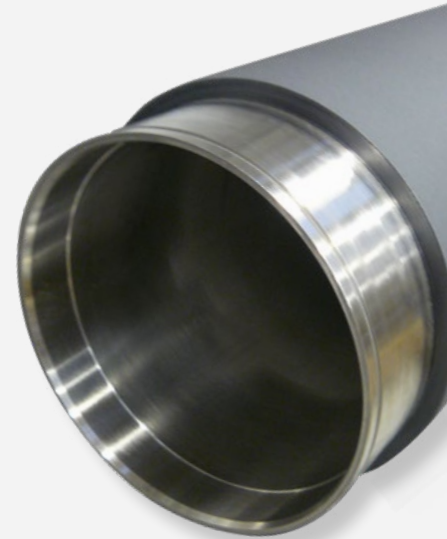
## TECHNICAL DATA

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>

\*Others on request

## BENEFITS

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



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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.