



MIXED METAL OXIDE (MMO) TITANIUM ELECTRODE ROD



PREMIER MANUFACTURER OF DSA ELECTRODES



JENNINGS ANODES

MMO TITANIUM ELECTRODE ROD

DATA SHEET

Jennings Anodes can manufacture mixed metal oxides coated titanium rod for water electrolysis in various applications. We can also provide customized lead cable fabrication and connection encapsulation.

■ Quality Substrate Material

Our electrode is manufactured from high-tensile titanium, which meets commercially Grade I/II standards.

Standard Element	Grade I	Grade II
Iron (Fe)	0.20% max.	0.30% max.
Carbon (C)	0.08% max.	0.08% max.
Nitrogen (N)	0.03% max.	0.03% max.
Hydrogen (H)	0.015% max.	0.015% max.
Oxygen (O)	0.18% max.	0.25% max.
Titanium (Ti)	Remainder	Remainder

■ Long Service Coating

Using state-of-the-art technology, the titanium base is taken to a high temperature (≥ 1200 °C) in a vacuum sintering furnace ensuring total coating adhesion. Thus, the coating consumption rate is extremely low and uniform, measured in milligrams per ampere-year.

• Iridium Oxide Based Catalyst

Ir-Ta mixed metal oxide coating is commonly for use in freshwater, where there is either no chloride ions or low chloride ions present.

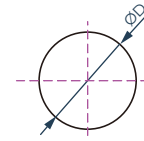
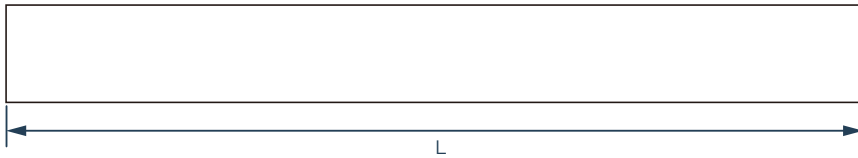
• Ruthenium Oxide Based Catalyst

Ir-Ru mixed metal oxide coating is preferred for severe conditions or highly chlorinated environments, including brackish water and seawater.

Technical Measurement	Performance
Coating Composition	Iridium Oxides (IrO_2), Tantalum Oxides (Ta_2O_5), Ruthenium Oxides (RuO_2)
Coating Thickness	5~10 μm
Operating Voltage	$\leq 24\text{V}$
Current Density	$\leq 2000 \text{ A/m}^2$
Electrolyte pH	1~14
Fluorides Content	< 50 mg/L
Working Temperature	< 60 °C



SPECIFICATIONS



Item No.	Diameter	Length	NPT
JA-MMR-3	0.13" (3.2 mm)	39" (1000 mm)	/
JA-MMR-6	0.25" (6.4 mm)	39" (1000 mm)	/
JA-MMR-12	0.5" (12.7 mm)	39" (1000 mm)	/
JA-MMR-19	0.75" (19 mm)	39" (1000 mm)	/
JA-MMR-25	1" (25 mm)	39" (1000 mm)	/

Notes: All dimensions and weights are nominal. The parameter provided is subject to variation in material compositions and Jennings Anodes foundry tolerance.

TESTING DETAILS

We employ ISO 9001:2015 quality management system and rigorous internal testing standards to ensure the optimum lifespan and performance of our electrodes. Each electrode is labelled with a unique serial number for quality tracking.

Technical Measurement	Chemical Composition	Electrochemical Performance	Physical Properties
Testing Standard	ASTM E120	ASTM D3359	Foundry ITP
Testing Content	Chemical Analysis	Electrical Resistance Current Efficiency	Dimension & Weight Coating Thickness Surface Finish
Equipment	Optical Emission Spectrometer OBLF QSN 750	Electrochemical Analyzer EPI 200	Calibrated Digital Measuring Devices

* Third party testing is conducted by customer's special request at extra charge.



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