



Platinized Niobium Electrodes

Due to its high conductivity and low consumption at the same time, platinum is an excellent anode material. However, considering its high cost, the use of platinum alone is not common. By cladding or electroplating a thin platinum layer on a low-cost substrate, platinum will become more practical. In addition, this also extends the effective anode surface area. The substrate must also have the ability to form an insulating oxide film under anodic conditions. The two most commonly used substrates at this stage are titanium and niobium.

Both niobium and titanium form insulating oxide films under anodic conditions. The electrical conductivity and corrosion resistance of niobium are better, but the price of niobium is more expensive. However, the breakdown potential of niobium is much higher than that of titanium. Titanium oxide has been reported to fail by breakdown at anodic potentials in the 10V range, while niobium films can withstand a breakdown voltage of up to 80V.

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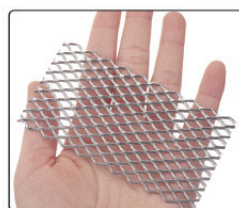
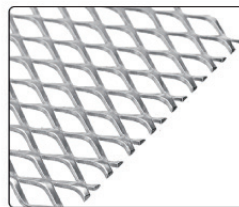
APPLICATION

- ▶ Electroplating
- ▶ Horizontal and Pulse Plating
- ▶ Cathodic protection
- ▶ Water treatment

FEATURES

- ▶ Uniform and fine coating;
- ▶ Tight adhesion;
- ▶ Stable performance;
- ▶ High current output and low voltage;
- ▶ Long service life;

The platinized niobium anode produced by YUXI adopts a special electroplating process, and the surface of the specially treated niobium substrate is fully or partially plated with platinum. YUXI can produce most materials in high-purity form and comply with applicable ASTM test standards. The surface of the product is silver-white, and has the advantages of uniform and fine coating, strong bonding, high output current, and long service life. This anode is mainly used for electroplating, cathodic protection, water treatment and other applications, especially suitable for compound solutions containing fluoride ions (such as hard chrome plating of piston rings, valves, etc.)



SPECIFICATIONS

Substrate Material	Niobium
Shape	Mesh (customized)
Coating Material	Platinum (purity 99.99%)
Noble Metal Content	$\geq 21.48 \text{ g/m}^2$
Platinum Thickness	0.5-15 μm
Current Density	$< 12000 \text{ A/m}^2$
Working Temperature	$< 80^\circ\text{C}$
Working PH Environment	1-12