

Optima™ Anodes

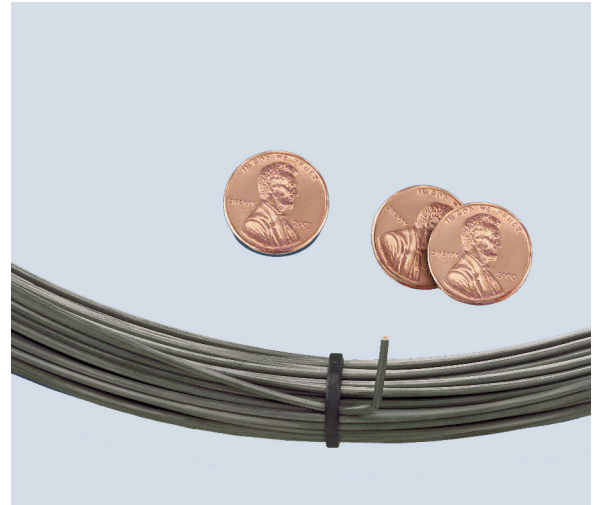
Ti-Clad Copper Wire Anodes for Cathodic Protection

Product Description

Optima™ Ti-Clad copper wire anodes are ideally suited for cathodic protection applications. The mixed metal oxide catalytic coating is sintered to the titanium substrate, providing a lightweight, durable anode.

With the proprietary catalyst used, Optima™ IOA-HF electrodes, are suitable for use in the widest range of cathodic protection applications including soil, carbonaceous backfill, fresh water, brackish water, and seawater.

The consumption rate of the mixed metal oxide coating is measured in milligrams per ampere-year. This low mass consumption rate combined with the unmatched strength-to-weight ratio for the titanium substrate results in unique advantages for the Optima™ anodes.



Key Benefits

- Lightweight – for example, 100 feet of the TICUR16GC-L wire weighs less than 2.5 lbs
- Ductile – the wire can be tied in a knot without damage
- Composite materials eliminate problems with breakage of brittle materials such as graphite and silicon iron
- Dimensional stability eliminates associated problems with connection seals
- Compatible with the widest range of cathodic protection media (water, coke, seawater, brackish water)
- Lower electrical resistance than solid titanium

Optima™ Wire Anode Ratings

Wire Dimensions

Diameter: 0.031" (.8mm)
Resistance: 2.5 ohms/100 ft (2.5 ohms/30.5m)

Amperage ratings in various media for 20 year life for 100 foot length of wire

Part Number	Coke	Water	Seawater
TICUR11GC-L	4	5	12
TICUR11GC-M	8	10	24
TICUR11GC-H	12	15	36

Wire Dimensions

Diameter: 0.062" (1.6mm)
Resistance: .067 ohms/100 ft (0.67 ohms/30.5m)

Amperage ratings in various media for 20 year life for 100 foot length of wire

Part Number	Coke	Water	Seawater
TICUR12GC-L	8	10	24
TICUR12GC-M	16	20	48
TICUR12GC-H	24	30	72

Wire Dimensions

Diameter: 0.062" (1.6mm)
Resistance: .067 ohms/100 ft (0.67 ohms/30.5m)

Amperage ratings in various media for 20 year life for 100 foot length of wire

Part Number	Coke	Water	Seawater
TICUR16GC-L	16	20	48
TICUR16GC-M	32	40	96
TICUR16GC-H	48	60	144

Optima™ Wire Anode Technical Details

The mixed metal oxide anode is comprised of a titanium clad copper wire with a mixed metal oxide catalyst sintered to the titanium substrate in a thermal decomposition process. The catalyst is a combination of iridium oxide (IrO₂) and tantalum oxide (Ta₂O₅). When the coating is cured in the oven to convert it to an oxide, some of the titanium from the substrate diffuses into the matrix forming an integral bond between coating and substrate. The process requires control of the temperature profile and the amount of catalyst gained. The catalyst is applied in multiple steps until the desired loading is achieved.

Quality Assurance

- ASTM D3359 – measuring adhesion by tape test
- ASTM B338 Titanium – material certificates available
- Coating loading measurement – XRF and weight gain

Material Availability

Siemens Water Technologies can meet your requirements by stocking material to your specifications and shipping it on an as needed basis.

Custom Orders

Please contact us if you have special requirements. Wire lengths, diameters, current requirements and even special catalytic coatings can be accommodated, including platinum.

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