安平县天昊丝网制品有限公司
Anping Tianhao Wire Mesh Products CO., LTD

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PRODUCT CATALOG

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产品目录册

安平县天昊丝网制品有限公司
Anping Tianhao Wire Mesh Products CO.,LTD

Company Profile
公司简介

Anping Tianhao Wire Mesh Products Co., Ltd Located in wire mesh hometown of China——Anping County. It is a comprehensive enterprise of manufacturing,marketing, importing and exporting. We have advanced equipment and professional R&D team.Main products are different kinds of metal wire mesh and related. Main products are different kinds of metal wire mesh and related deep processing filter mesh. Such as stainless steel wire mesh, copper wire mesh, nickel wire mesh, monel wire mesh, Inconel wire mesh, Hastelloy wire mesh, Nichrome wire mesh, Feral wire mesh, titanium wire mesh, mesh filter tube, mesh filter cap, mesh filter disc and so on.

Area: 99000m^2
No.of Employees:200+people
No.of QA/QC Inspector(s):12 people
Annual Revenue:USD USD 10.678.360,00
Certificates:ISO9001 certificate,SGS certificate

Service Areas
服务区域

Main market: Australia,Germany,UK,Spain,Sweden,Switzerland,Norway, Austria,Italy,Nether-land,USA,Canada,Japan,Korea etc.

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Application of Titanium Electrode

Coated titanium electrode, commonly known as DSA (Dimensionally Stable Anode), also known as DSE (Dimensionally Stable Electrode), is a new type of insoluble anode material developed in the late 1960s. DSA-coated titanium anodes are mainly used in electrochemistry and electrometallurgy.

The role of the metal oxide coating on the titanium electrode is: low resistivity, good electrical conductivity (titanium itself has poor electrical conductivity), stable chemical composition of the precious metal coating, stable crystal structure, stable electrode size, and corrosion resistance .It has good electrocatalytic performance, and is beneficial to reduce the overpotential of oxygen evolution and chlorine evolution reaction and save electric energy.

The fields of application of DSA coated titanium electrodes are: chlor-alkali industry, chlorate production, hypochlorite production, perchlorate production, persulfate electrolysis, electrolytic organic synthesis, electrolytic extraction of non-ferrous metals, electrolytic silver catalyst production, Copper foil production by electrolysis, mercury recovery by electrolytic oxidation, water electrolysis, production of chlorine dioxide, hospital sewage treatment, treatment of cyanide-containing wastewater in electroplating plants, disinfection of domestic water and food utensils, treatment of cooling circulating water in power plants, wool spinning Treatment of factory dyeing and finishing wastewater, treatment of industrial water, production of acid-base ionized water by electrolysis, galvanizing, rhodium-plating, palladium-plating, gold-plating, lead-plating of copper plates, desalination of seawater by electrodialysis, preparation of tetramethyl hydroxide by electrodialysis Ammonium, molten salt electrolysis, battery production, cathodic protection, production of negative electrode foil, anodization of aluminum foil, etc. It is widely used in chemical industry, metallurgy, water treatment, environmental protection, electroplating, electrolytic organic synthesis and other fields.

Advantages of titanium electrodes

After years of production and research, it has been found that compared with traditional graphite electrodes and lead electrodes, titanium electrodes have incomparable advantages:

(1) The anode size is stable, and the distance between the electrodes does not change during the electrolysis process, which can ensure that the electrolysis operation is carried out under the condition of stable cell voltage;

(2) The working voltage is low, the power consumption is small, and the DC power consumption can be reduced by 10%---20%;

(3) The anode has strong corrosion resistance and long working life, 6a can be used in the chlor-alkali industry, while the graphite anode is only 8 months;

Coated Titanium Electrodes

(4) It can overcome the dissolution problem of graphite anode and lead anode, avoid the pollution of electrolyte and cathode products, and thus can improve the purity of metal products;

(5) The traditional graphite electrode is 8A/dm², while the coated titanium electrode can reach 17A/dm², which improves the current density and thus improves the efficiency and output;

(6) The profiles are easy to process and can produce high-precision products;

(7) The base metal titanium is insoluble and can be used repeatedly after recoating, reducing the cost of electrodes.

Application field

1.Ruthenium Titanium Anode

01 University scientific research experiment

02 Electrolyzed sodium hypochlorite

03 Hydrometallurgical electrolytic copper

04 Circulating water descaling

05 Ship anode protection

06 Sewage treatment

07 Electrolyzed hypochlorous acid water

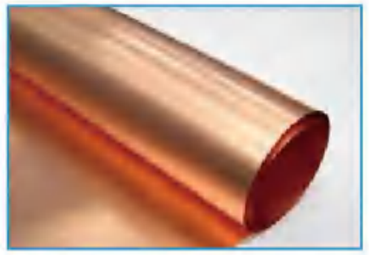
08 Fruit and vegetable machine disinfection

09 Chlor-alkali industry

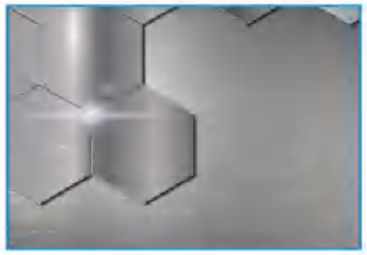
Application field >>>

2.Iridium Titanium Anode

01 Aluminum foil into iridium tantalum electrode



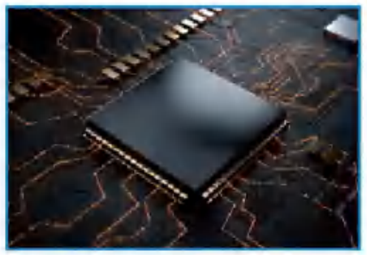
02 Electrolytic copper foil iridium tantalum electrode



03 Iridium tantalum electrode for steel plate electroplating plate

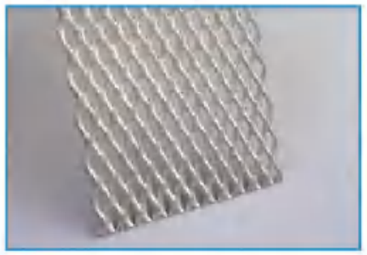
04 Electrolytic copper sulfate iridium tantalum electrode

05 Organic Synthesis Iridium Tantalum Electrode



06 Iridium-tantalum electrode for circuit board plating

3.Platinum Titanium Anode



01 Electroplating platinum titanium mesh

02 Electroplating machine platinum arc

03 Jewelry Electroplating Platinum Titanium Mesh

Ruthenium Titanium Electrode

Principle of Ruthenium Titanium Electrode

Ruthenium-based titanium electrode is used in chlorine evolution reaction, has extremely low chlorine evolution overpotential, excellent stability and durability, has extremely high anti-corrosion performance, will not pollute the medium, and after the electrode loses activity,the substrate will not be affected. damage can be reused.

Current density:<2000 A/㎡

Hydrochloric acid environment:<20 %

Coating thickness:5-20μm

Coating precious metal content:5-20 g/㎡

Advantages: After our company's research and improvement of products, the process adopts multi-layer coating, the voltage of titanium electrode tank is 5%-10% lower than that of the peers, the electrolysis efficiency is higher, the service life is longer, and the electrode shape can be designed according to user needs.

Application fields:chlor-alkali industry, electrolysis of sodium hypochlorite, hydrometallurgy, diaphragm method for alkali production, electrolytic production of chlorine dioxide, electrolysis of seawater for chlorine production, sewage treatment, sterilization and algae killing of circulating water, electrolytic metal deposition in chloride system, ionized water electrolysis, fruits and vegetables Machine disinfection, EDI electrodialysis, etc.

Ruthenium Titanium Electrode >>>

Titanium electrode for sodium hypochlorite generator

The main mode of action of sodium hypochlorite disinfection is to form hypochlorous acid through its hydrolysis, and hypochlorous acid is further decomposed to form new ecological oxygen (O). , thereby killing pathogenic microorganisms. Secondly, in the process of sterilization and virus killing, hypochlorous acid can not only act on the cell wall and virus shell, but also penetrate into the body of bacteria (viruses) because of its small molecules and no charge. Organic macromolecules such as proteins, nucleic acids and enzymes undergo oxidation reactions to kill pathogenic microorganisms. Thirdly, the chloride ion produced by hypidine can also significantly change the osmotic pressure of bacteria and virions, causing cells to lose activity and die.

The main reaction process of sodium hypochlorite generator electrolysis can be represented by the following equation:

$NaCl+H_2O=NaClO+H_2\uparrow$

Electrode reaction: Anode: $2Cl^-+2e^- \rightarrow Cl_2$ Cathode: $2H_2O+2e^- \rightarrow H_2+OH^-$

Solution reaction:$2NaOH+Cl_2 \rightarrow NaCl+NaClO+H_2O$

Advantages:high chlorine production efficiency, stable performance, long service life and wide range of uses.

Anping Tianhao Wire Mesh Products Co., Ltd

Ruthenium Titanium Electrode

Titanium electrode for electrodialysis

Electrodialysis is a physical and chemical process in which ions migrate from one part of the water to another part of the water by using the selective permeability of the ion exchange membrane under the action of an external DC electric field. Electrodialysis desalinator is to use the electrodialysis process in multi-layer compartment to achieve the purpose of desalting water. The application of electrodialysis in wastewater treatment engineering is mainly wastewater desalination and recovery and utilization of useful substances. In some biochemical wastewater, COD and salt content are very high. When these wastewaters are treated by biochemical methods, bacteria cannot grow due to the high concentration of salt. Therefore, electrodialyzers can be used to desalinize these wastewaters to reduce the salt content before biochemical treatment. Recyclable inorganic salts are contained in papermaking wastewater, electroplating wastewater, etc., which can be recycled by electrodialysis.

Advantages: The effect of reducing COD and salt content is remarkable, the energy consumption is low, the electrolysis effect is good, and the performance is stable.

Ruthenium Titanium Electrode >>>

Titanium electrodes for cathodic protection

In the field of cathodic protection, due to the use of titanium as the substrate, it is easy to process into various required shapes, and the weight is light, which brings convenience for handling and installation. MMO titanium anodes are used more and more in cathodic protection. It has the advantages of high current density, acid resistance, long life, etc. It is used in soil, pipes and concrete. Impressed current cathodic protection titanium anode has the shape of strip, tube and so on. Since the surface of the electrode is covered by a highly catalytically active oxide layer, the potential of the titanium substrate exposed at some defects on the surface usually does not exceed 2 volts, so the titanium substrate will not cause breakdown of the surface passivation film (in the When used in soil, the applied voltage is generally controlled below 60 volts). Cathodic protection is the addition of cathodic polarization to the protected metal to reduce or prevent metal corrosion.

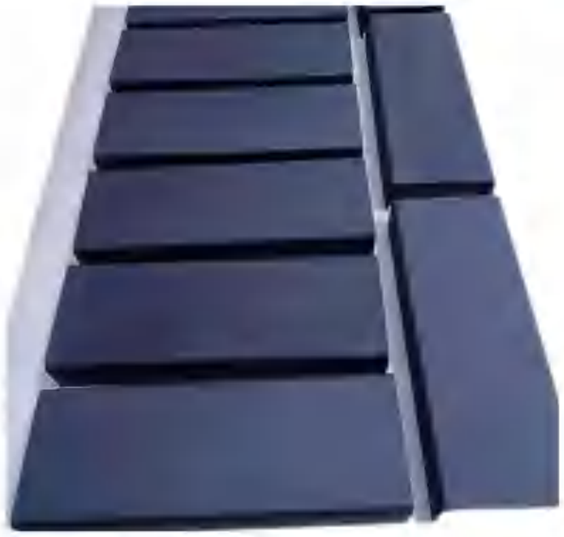
Mixed metal oxide anodes also have excellent physical, chemical and electrochemical properties. The resistivity of its coating is 10-7Ω·M, which is extremely resistant to the action of acid environments, with small polarization and extremely low consumption rate. By adjusting the composition of the oxide layer, it can be adapted to different environments, such as seawater, freshwater, soil. The mixed metal oxide anode has a service life of 20 years in the ground bed at a working current density of 100A/㎡, and its consumption rate is about 0.1mg/A·a. When the current density reaches 5000A/㎡, the electrode will not be passivated. And the phenomenon of being dissolved, reliable performance and low price. For the anode for cathodic protection under the condition of shallow soil and deep soil container protection, under the current density of 100A/㎡, the service life is ≥20 years; for the titanium anode for cathodic protection under the condition of seawater medium, under the current density of 600A/㎡, use Lifespan ≥ 20 years. Since mixed metal oxide titanium anode has the advantages that other anodes do not have, it has become the most ideal and promising auxiliary anode material at present.

Ruthenium coating system is suitable for salt water and sea water environment;
The iridium-based coating system is suitable for soil and freshwater environments.

Anping Tianhao Wire Mesh Products Co., Ltd

Ruthenium Titanium Electrode

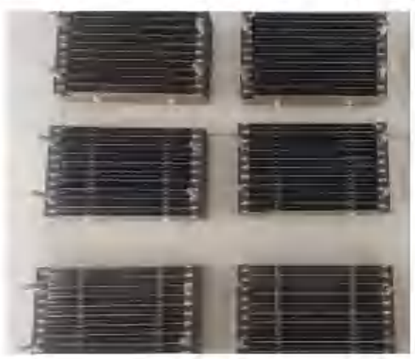
Titanium electrodes for cathodic protection



Titanium electrode for fruit and vegetable machine

Fruit and vegetable machine, also known as fruit and vegetable purifier or fruit and vegetable washing machine, refers to the use of electric performance to put different cleaning, disinfection and anti-virus functions in the machine, mainly used for cleaning vegetables, fruits, baby bottles (toys, clothing, etc.). Scientific experiments have proved that the fruit and vegetable function can effectively remove pesticides on vegetables and fruits, and effectively decompose harmful substances to the human body, so as to achieve the effect of safe consumption!

Advantages: Our company has many years of R&D and production experience, and can design and customize various sizes of titanium anodes for fruit and vegetable machines according to your actual needs.



Ruthenium Titanium Electrode >>>

Titanium anode for swimming pool disinfection

Ruthenium-based titanium electrodes for swimming pool sterilization, the disinfection system using this salt chlorination system can effectively reduce the corrosion rate of swimming pool equipment and the bleaching and decolorizing damage to swimming suits, and because of the use of soft water, the system can also greatly reduce the damage to the skin. stimulating effect.

The principle of making sodium hypochlorite by electrode method is to use non-diaphragm electrolysis to generate sodium hypochlorite through homogeneous secondary chemical reaction. The reaction principle of the anode is to electrolyze sodium chloride (in the form of a tablet) thrown into the swimming pool. Sodium hypochlorite is formed during electrolysis, and the most suitable salt concentration is 3%-5%.

Advantages: It can be reversed in actual use, the chlorine evolution overpotential is low, the current efficiency is high, the energy saving effect is good, and the working life is long.

Ruthenium Titanium Electrode

Titanium electrode for sewage treatment

Titanium electrodes for sewage treatment include the treatment of domestic sewage, industrial water, factory wastewater, etc., the electrode not only plays the role of transmitting current, but also catalyzes the oxidative degradation of organic matter. called green water treatment. With the development of industry, the discharge of organic wastewater is increasing, especially the high-concentration wastewater discharged from the chemical, food, pesticide and pharmaceutical industries. It has high chromaticity and high toxicity, and contains a large number of bio-refractory components, which seriously pollutes rivers, lakes and seas. The new technology of water treatment by electrolysis has the advantages of no need to add chemicals, small equipment size, small footprint, and no secondary pollution. It has been used to treat organic pollutants containing hydrocarbons, alcohols, aldehydes, ethers, phenols, etc. waste water. The removal of COD mainly relies on the oxidation reaction on the anode surface, which directly oxidizes and degrades the organic matter on the anode surface, so that the organic matter in the sewage is converted into carbon dioxide and water directly or indirectly through electrochemical conversion.

Advantages: Our company can develop and produce matching titanium electrode types according to different working environments such as sewage composition, current and voltage, and provide customers with cost-effective titanium electrodes.

Iridium Titanium Electrode >>>

Iridium Titanium Electrode Parameters

The iridium-based titanium electrode has excellent catalytic activity in the oxygen evolution reaction, strong stability in acidic solution, extremely high anti-corrosion performance, high current efficiency, long working life, extremely light electrode weight, and can carry a large current density. The medium will not pollute, and the electrode substrate can be reused. The iridium-coated titanium electrode is the most promising coated electrode in the field of oxygen evolution.

Current range:<2000 A/㎡ **Temperature range:**<70 °C
Coating thickness:5-20μm **Precious metal content:**10-45 g/㎡
Advantages: After our company's research and development of iridium-based titanium electrodes, the active coating on the anode surface is evenly distributed, has good electrical conductivity, effectively reduces overpotential and cell voltage, and the shape of the electrode can be designed according to user needs.
Application areas:metal foil, electrolytic copper foil, steel galvanizing, cathodic protection, organic electrolytic synthesis, circuit board electroplating, chrome electroplating, swirl electrolysis, hydrometallurgy, HHO generator, sewage treatment and other industries.

Titanium electrodes for electrolytic foil making

Copper foil

Copper foil refers to the copper foil covering the surface of the copper clad laminate. Used as a printed circuit board to obtain an electrical pattern. The thickness of the copper foil used in the copper clad laminate is generally 7-70 μm, and the electrolytic method is mostly used at present. The earliest copper foil electrodes used lead-based alloy anodes and stainless steel electrodes, but they were gradually replaced by noble metal oxide-coated titanium anodes due to their defects. Precious metal titanium oxide-coated titanium electrodes have the advantages of light weight,long life,high current power supply, stable operation, and no environmental pollution, and are widely used around the world.
The manufacturing process of electrolytic copper foil is to use electrolytic copper or scrap copper wire with the same purity as electrolytic copper as raw material, dissolve it in sulfuric acid to make an aqueous solution of copper sulfate, use metal roller as cathode, and continuously through electrolytic reaction. The metal copper is electrolytically deposited on the surface of the cathode roll, and at the same time, it is continuously stripped from the cathode roll. This process is called the green foil

Iridium Titanium Electrode

Titanium electrodes for electrolytic foil making

electrolysis process. The side that is finally peeled off from the cathode (the glossy side) is the side that is seen on the surface of the laminate or printed circuit board, and the reverse side (commonly known as the rough side) is the side that needs to be subjected to a series of surface treatments to bond with the resin in the printed circuit board.

Electrolysis principle

During electrolysis, cations in the electrolyte migrate to the cathode, and electrons are obtained at the anode to be reduced. Anions run to the anode and lose electrons to be oxidized. Two electrodes are connected to the copper sulfate solution, and direct current is applied. At this time, it will be found that copper and hydrogen are precipitated on the plate connected to the cathode of the power supply. In the case of a copper anode, the dissolution of copper and the evolution of oxygen occur simultaneously. The reaction is as follows:
Cathode: Cu2++2e→ 2Cu 2H++2e→ H2↑
Anode: 4OH-+4e →2H2O+O2↑ 2S042-+2H2O-4e →2H2S04+O2↑
The copper dissolved from the anode supplements the consumption of copper ions in the electrolyte. The surface of the cathode is treated to a certain extent,so that the copper layer deposited on the cathode can be peeled off, and a copper skin with a certain thickness will be obtained. The copper skin with certain functions is called copper foil.
Advantages: The special anode formula coating developed by our company can not only make the distribution of the active coating on the anode surface more uniform, but also maintain stable electrolytic performance when the current output is uneven, avoiding the situation of uneven thickness of copper foil, Long service life and rework and overcoating services are available.

Aluminum foil

Aluminum electrolytic capacitors are generally composed of anode foil and cathode foil. The foil used for the cathode of the capacitor is called cathode foil, and the anode foil is also called chemical foil. The anode foil is made of high-purity aluminum of more than 99.9%, and the thickness of the foil is 0.03-0.12mm.The withstand voltage varies from 8V to 800V. Among them, chemical forming foils with withstand voltage below 170V are low-voltage forming foils, 170V-400V are

Iridium Titanium Electrode >>>

Titanium electrodes for electrolytic foil making

called medium-voltage forming foils, and those above 400V are high-voltage forming foils. The anodized foil is electro-etched from the light foil and then chemically treated to form an oxide film on the surface of the aluminum foil. The anode foil is formed by electro-erosion before it is formed. The methods include direct-current electro-etching and alternating-current electro-etching. At present, DC is generally the main method. Formation methods currently include constant current formation method and constant voltage formation method.called medium-voltage forming foils, and those above 400V are high-voltage forming foils. The anodized foil is electro-etched from the light foil and then chemically treated to form an oxide film on the surface of the aluminum foil. The anode foil is formed by electro-erosion before it is formed. The methods include direct-current electro-etching and alternating-current electro-etching. At present, DC is generally the main method. Formation methods currently include constant current formation method and constant voltage formation method.

Iridium Titanium Electrode

Titanium electrode for galvanized/tinned steel sheet

Electro galvanized sheet

Electrogalvanized sheet has good corrosion resistance,workability,weldability and paintability,and is mainly used in automobiles,home appliances,light industry and other industries. Electro-galvanized products include double-sided,single-sided and differential thickness coatings according to different coatings.At the same time,according to the different post-plating treatments,there are passivation, phosphating,fingerprint resistance and other products.

Electroplated tin plate

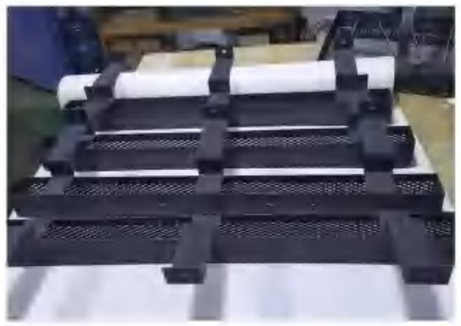
Electroplated tin plate is mainly used in the packaging industry,it has excellent corrosion resistance, beautiful appearance,high strength,light weight,good formability,and good resistance to organic substances,dilute acids,alkalis and salts.Tinplate products can be further subdivided into two categories:food (that is, food packaging products) and general-purpose products (that is,non-food packaging products)

Brief description of production process

After several pretreatment processes,the cathodized strip passes through a series of electrolytic cells in which the electrolyte contains soluble zinc or tin ions,which are electrolytically deposited on the strip through an electrochemical reaction surface.

Reaction mechanism

Anodic reaction (on the anode surface):$2H_2O \rightarrow O_2\uparrow + 4H^+ + 4e$
Main cathodic reaction (on the steel surface):$Zn^{2+} + 2e \rightarrow Zn$/$Sn^{2+} + 2e \rightarrow Sn$
Cathode surface reaction:$2H_2O + 4e \rightarrow H_2\uparrow + 2OH^-$
Advantages:Keep the bath clean and make the performance of the coating more reliable.



Iridium Titanium Electrode >>>

Titanium electrodes for copper recovery from alkaline/ micro-etching solutions

In the production process of circuit boards,copper sinking,electroplating,stripping, etching and other processes all generate a large amount of waste water.According to different processes,it is divided into alkali etching and acid etching.The mass concentration of the copper etching mother solution is generally about 100g/L. Copper can be recovered individually or in combination. In the electrolytic extraction of copper metal in sulfuric acid solution,oxygen is released on the anode,and it is a very important issue to choose the appropriate anode material.

Advantages: The iridium-coated titanium anode developed and produced by our company can recover copper from sulfate waste liquid (acid waste liquid) and mixed waste liquid of chloride waste liquid and sulfate waste liquid. The anode works stably and has a long corrosion resistance life.

Platinum Titanium Electrode

Platinum Titanium Electrode

Platinum has excellent corrosion resistance, electrical conductivity and catalytic activity, and is an ideal insoluble electrode. However, pure platinum has low mechanical strength, is easy to deform, and is expensive, so it is not economical to directly apply in industry. In order to improve the performance of platinum electrodes and considering economic factors, a process of coating platinum on titanium substrates was developed to make platinum-coated titanium electrodes.

Current:<4000 A/㎡

Temperature:<80 °C

Coating thickness:0.5-10μm

Advantages: The platinum-titanium electrode developed and produced by our company has high oxygen evolution potential,low hydrogen evolution potential, high current efficiency,strong corrosion resistance,long service life, electrode shape can be designed according to user needs, no pollution to the medium, electrode matrix Features such as reusable.

Application areas:electrolysis of water ions, electroplating, oxidizing acidic potential water, HHO generator, cathodic protection,metal electroplating, hydrogen-rich water machine and other fields.

Titanium electrode for hydrogen-rich water machine (cup)

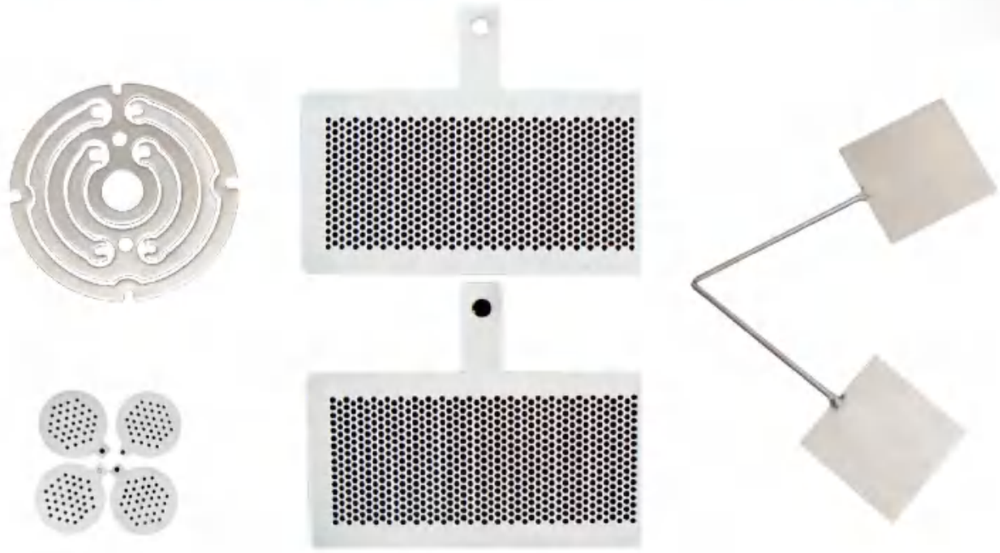
Hydrogen-rich water machine (cup) is also known as electrolytic hydrogen-rich water machine (cup), the water produced by electrolysis can neutralize acidic metabolites in the body, prevent acidification of the body, eliminate various diseases, and can choose to neutralize toxic substances. The free radicals have the effect of beauty and anti-aging, as well as anti-fatigue, anti-inflammatory, anti-radiation, anti-allergic and other effects. The amount of hydrogen produced is related to the electrode of the electrolyzed water, the electrolysis time, and the structure of the electrolyzer.

The working principle of the hydrogen-rich water machine (cup) is that under the action of electric current, the electrolyte undergoes oxidation reaction and reduction reaction on the two electrodes respectively. At the cathode, hydrogen is formed by reducing water, and at the anode, oxygen is formed by oxidizing water.

Advantages: The hydrogen production can be as high as 1000PPM or more,and the cost performance is high.

Platinum Titanium Electrode >>>

Titanium electrode for hydrogen-rich water machine (cup)



Titanium Electrode for Precious Metal Electroplating

The insoluble platinum-titanium anode has excellent electrical conductivity, chemical and electrochemical stability, strong corrosion resistance, high mechanical strength and catalytic activity, good selectivity, practicability, and reasonable price. These properties of platinum-titanium anodes are not only unmatched by graphite anodes and stainless steel anodes, but also better than gold, platinum and other precious metal insoluble anodes because of their economical utility. Therefore, it is widely used in the field of precious metal electroplating.

Advantages:can withstand high current density, high current efficiency, corrosion resistance,stable structure,no pollution to the plating solution and coating,and can be used for precision electroplating.

Platinum Titanium Electrode

Titanium Electrode for Precious Metal Electroplating