DSA (Dimensionally Stable Anode) for Electro-Coating

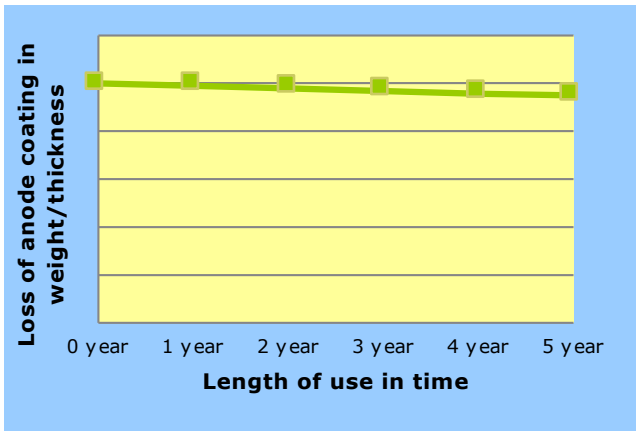
PT-DSA

Product Highlights

- **Excellent corrosion resistance**
- **Environmentally Friendly**
  Conventional stainless steel anode releases heavy metals such as Fe,Ni,Cr, etc during its use. PT-DSA elutes virtually no heavy metals.
- **Prolong membrane electrode life**
  The releasing of the heavy metal from the stainless steel anode are one of the causes for membrane's clogging. When PT-DSA is used as anode for the membrane electrode, due to its small dissolving rate it significantly reduces the membrane clogging, and hence longer membrane electrode product life.
- **Easy handling**
  PT-DSA weighs only 1/5 compared to the stainless steel anode. It is also mechanically stronger than some ceramic anodes that breaks/cracks.

Design Details

PT-DSA has a titanium substrate which is coated with precious metal oxide. The Precious metal oxides such as iridium oxide and ruthenium oxide has very high corrosion resistance while having very low electrical resistance, making it an ideal protective coating of anode for heavy duty application.
The surface of the titanium substrate is first treated, then coated with solution containing precious metal, and finally it is baked to form the coating. This process is repeated many times to achieve its excellent properties as an anode.



Comparison with SUS316

	SUS316	PT-DSA
Material	SUS316	Titanium substrate with iridium oxide
Erosion rate	5 ~ 200×10 $^{-6}$g/C	1 ~ 10×10 $^{-8}$g/C
Anolyte conductivity	Less than 1000μS / cm	1000 ~ 3000μS / cm
Heavy metal in anolyte	Cr,Ni,Fe	
Life	2 ~ 5 yrs.	7 ~ 10 yrs.
Mechanical strength	Very high	Very high
Size	48.6Φ Tube	27.2Φ Tube

※Life of anode depends on operating condition. The given number should not be taken as guaranteed.

Application

Use as bare anode

By installing proper ratio of both membrane electrodes and bare electrodes, acid (neutralizer) level in the E-Coat paint can be balanced properly. If too many PT-AN(acid removal type) membrane electrodes are used, the acid level becomes too low in the E-Coat bath. Bare Electrode can provide electrical current without removing acid, thus introduction of bare anode can help to balance the acid level.

Use as anode inside membrane electrode

PT-LAN (low acid removal type): prevents sludge build on anode and help balance the neutralizer.
PT-AN (acid removal type): Able to operate under higher anolyte conductivity and thus reducing the waste water disposal to 1/10th. Since very little precious metal is released, waste water disposal is less difficult.

Versatile anode positioning

PT-DSA's light weight combined with its mechanical strength make it possible to install the anode in variety of positions. For highly demanding coating jobs such as car bodies, it is a big advantage to be able to install in various positions and target certain parts of the work to attain desired E-Coat film thickness.

Important points when installing

① Please use PT-DSA in conditions below 50A current per 2m/pipe. When exceeding 50A per 2m/pipe, please increase the number of PT-DSA pipes and distribute the current load.
② PT-DSA manifests its corrosive resistance when used as an anode. When operated as cathode, it will generate hydrogen on its surface and break the layer of the precious oxide coating. Use caution where PT-DSA is installed.

Handling precautions

Although PT-DSA is light weight and easy to handle, the precious metal coating layer is not strong against mechanical impact and scratching. Please care with handle, and take precautions on points listed below.① Protect it from strong impact
② Protect from impact against hard object
③ Do not rub or scratch with metal object
④ Wear gloves when carrying the anode portion
⑤ Protect the electrode from oil
⑥ Do not expose to acidic atmosphere when storing
⑦ Do not power-wash
To Cleaning off the PT-DSA electrode portion, please use Butyl-cellosolve.

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