



Product Bulletin

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ANODIZE 2S CONCENTRATE

2900040
8/9/06

Anodize 2S Concentrate/Anodize 2S Additive is a system for producing colors from champagne to black on anodized aluminum using a tin sulfate based bath. **Anodize 2S Concentrate** gives uniform reproducible results when applied to a uniformly anodized aluminum part.

The system contains three components:

Anodize 2S Concentrate ... Makeup and tin replenisher
Anodize 2S Additive stabilizer for tin
Sulfuric Acid..... Conductivity agent

EQUIPMENT

The two-step coloring tank should be 316 stainless steel lined with non-conductive liner such as PVC, polypropylene, or other sulfuric acid resistant material. The electrodes should also be 316 stainless steel. A complete wall of electrode(s) should go the length of the tank. The electrode(s) can be in the form of sheets, strips, bars, rods, etc.

TANK OPERATING PARAMETERS

Anodize 2S Concentrate 9- 11% by volume
Anodize 2S Additive 0.8-1.1 %by volume
Sulfuric Acid..... 18-21 g/L

CONTROL PROCEDURE

A. Tin concentration control procedure

1. Take a 250-ml flask and put 100 mls of water in it.
2. Add 25 mls of concentrated hydrochloric acid.
3. Next add 3 mls of starch indicator solution.
4. Finally add a 10-ml sample of the **Anodize 2S Concentrate** to the flask.
5. Titrate with 0. 1 N Iodine until the solution changes from clear to blue.
6. *Calculations:* $(\text{mls of } 0.1N \text{ Iodine}) \times 0.595 = \% \text{vol } \mathbf{Anodize\ 2S\ Concentrate}$
 $(\text{mls of } 0.1N \text{ Iodine}) \times 1.07 = \text{g/L stannous sulfate}$

Anodize 2S Concentrate should be 9 – 11% by volume
The stannous sulfate concentration should be 16-20 g/L

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Note: 5 gallons of **Anodize 2S Concentrate** (0.5% vol.) will raise the concentration of 1000 gallons of the color bath by approximately 1 g/L of stannous sulfate.

B. Acidity

1. Place 200 mls of water and 50 ml of the two-step bath in a 400-ml beaker.
2. Standardize the pH meter with 7.0 and 2.0 buffer.
3. Using the pH meter, titrate the solution with 1.0 N NaOH until the pH reaches 2.1.
4. *Calculations:* $(\text{mls of } 1.0 \text{ N NaOH}) \times 0.98 = \text{g/L acidity}$

The acidity should be 18-21 g/L

Note: 1 gallon of 66° Be sulfuric acid will raise total acidity of 1000 gallons approximately 2 g/L

C. The concentration of **Anodize 2S Additive** may be determined by the following:

1. In a 250 ml beaker, add 5ml of two step solution and 5ml of concentrated sulfuric acid.
2. Titrate with 0.1 N Potassium Permanganate until a pink color persists for one (1) minute. Record the mls as "A".
3. *Calculation:* $(A \times 0.83) - (B \times 0.25) = \% \text{ Anodize 2S Additive}$
Where "B" is the g/L tin results

Anodize 2S Additive concentration should be 0.8 - 1.1 % by volume.

PHYSICAL AND SAFETY DATA

Anodize 2S Concentrate is a clear, colorless liquid. **Anodize 2S Concentrate** is corrosive. Rubber gloves and safety glasses should be worn when handling material

WARRANTY

THE QUALITY OF THIS PRODUCT IS GUARANTEED ON SHIPMENT FROM OUR PLANT. IF THE USE RECOMMENDATIONS ARE FOLLOWED, DESIRED RESULTS WILL BE OBTAINED. SINCE THE USE OF OUR PRODUCTS IS BEYOND OUR CONTROL, NO GUARANTEE EXPRESSED OR IMPLIED IS MADE AS TO THE EFFECTS OF SUCH USE, OR THE RESULTS TO BE OBTAINED.