# NEUTRASTAN

## Tin Replenisher

**Product No 50501**

Neutrastan, a new user-friendly product from InnoChem, is a source of highly concentrated stannous tin in a fluid and neutral pH form. It replenishes the plating bath tin content, and in the meantime, neutralizes the excessive free acid.

**Advantages / Benefits:**

- Neutrastan, when used as a source of tin for pure tin and tin-lead plating processes utilizing insoluble anodes, prevents acid build up.
- Neutrastan is an effective services tool, neutralizing excessive acid in methane sulfonic acid or sulfuric acid based systems.
- Neutrastan maintains the stability of the acid-to-metal ratio in the plating baths enabling optimum process efficiency and resulting in more consistent quality products.
- Neutrastan is a neutral pH product that requires less considerations as hazardous material either for storage or transportation.

**Applications:**

1. Plating Baths with insoluble anodes

   A tin process running at 100% efficiency will remove 220 grams of tin metal for each 100 ampere hour. To replenish this lost metal requires 314 grams of Neutrastan ( 70% of $Sn^{2+}$ ).

   The frequency of adding Neutrastan is determined by the desirable level of stability for acid-to-tin ratio and tin content in the plating bath. If the plating bath is capable of tolerating higher fluctuation for both acid-to-metal ratio and metal content, the addition of Neutrastan can be less frequent. However, the overall requirements for Neutrastan are determined by both amp-hour used and drag-out. Because of drag-out, there is a tendency for this type of plating bath to drop in free acid level, periodic addition of acid may be required as determined by chemical analysis of the plating bath solution.

2. Plating Baths with excessive amount of acid

   High acid levels in the process result in a loss of plating efficiency, an addition of Neutrastan will effectively reduce the free acid level and return the process to its optimum condition.

Use titration method to determine the amount of excessive free acid in the plating bath. For example, the free acid content of a methane sulfonic acid plating bath is 2% above the desirable level, the plating bath volume is 100 liters, and the specific gravity of solution is 1.15:

The total free acid to be neutralized is: 1 Kg X 1.15 X 100 liters X 2% = 2.3 Kg

The Neutrastan needed is: [(2.3 Kg / 96) X 59.35] / 70% = 2.03 Kg

In another word, each 100 grams of Neutrastan will neutralize approximately 113 grams of free methane sulfonic acid or 58 grams of sulfuric acid while increase tin content by 70 grams.

Neutrastan is supplied in a slurry form. It is packaged in 6-lb plastic bags, which is called 'unit'. Each unit contains 4 lbs of stannous tin ($Sn^{2+}$).

If less than one unit is to be added to the process, the container should be shaken vigorously to produce a homogeneous mixture. This allows more accurate additions to be made.

## Ordering Information:

50501 NEUTRASTAN UNIT (6-lb unit contains 4 lbs Stannous Tin per unit)

**Any questions regarding the use of this product, please consult InnoChem or your local representative.**