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A2LA Accredited ISO/IEC 17025:2005 Certificate # 2558.01

575 SEAL-CLEAN Nickel-based Seal for Aluminum

INTRODUCTION

Proper sealing of anodized aluminum alloys is of fundamental importance. This stage of your processing operation determines the useful life of your production – color retention and corrosion protection. Still, this basic step can produce many difficulties, from leaching of dyes to smutty residues. We have formulated **575 Seal-Clean** to minimize these problems. Anodized coatings sealed with **575 Seal-Clean** pass all standard performance tests, such as ASTM B 136.

FEATURES AND BENEFITS

Liquid products	Easy to measure and mix
Highly buffered solution	Tolerates drag-in from acid stages
Temperature stable	Performs over a wide temperature range
Smut-free finish	No additional labor required to clean work

OPERATING CONDITIONS

575 Seal-Clean	3 – 6% by volume
Immersion time	2 – 10 minutes
Temperature	140 - 180°F (60 - 80°C)
pH	5.5 – 6.0

TYPICAL PROCESS CYCLE

Mild alkaline cleaner	110 N/C Aluminum Soak
Caustic etch	366-G Etch
Deoxidize-Desmut	DX-14 Deox/Desmut
Sulfuric acid anodize	Conditions as required for your work
Seal	575 Seal-Clean

Adequate rinsing, while not listed here, is a highly critical aspect of the finishing operation. Make sure that all rinses are replenished as necessary.

MAKE-UP and OPERATION

Properly maintaining the **575 Seal-Clean** solutions will result in excellent production rates and minimize the treatment, downtime, and expense that dumping causes.

- 1.) Clean and rinse all tanks and equipment before making up working solution. All construction should be of suitable strength polypropylene or polyethylene, reinforced as necessary. (Steel, protected by a drop-in liner, is acceptable.)
- 2.) Fill tank 2/3 full with water. (In hard water areas, deionized water is preferred.) Add the required amount of **575 Seal-Clean**, and mix thoroughly.
- 3.) Fill tank to working volume.
- 4.) Adjust pH, if necessary, into the range of 5.5-6.0. Use dilute ammonium hydroxide to raise the pH or small amounts of acetic acid to reduce. Solution is now ready to use.
- 5.) Use only the amount of **575 Seal-Clean** required. Excess concentration will not necessarily improve performance or rate of sealing.
- 6.) Small, frequent additions of **575 Seal-Clean** will give you more consistent results than larger, less frequent additions. Many factors, such as coating thickness, surface area, and drag-in/drag-out, affect consumption. Experience is the best guide to maintenance.
- 7.) Adjust sealing conditions as production changes. There is no single combination of time, temperature and concentration that is suitable for all work.

ANALYTICAL CONTROL

Regular analysis of your **575 Seal-Clean** solutions will ensure the continuous quality of your production. This analysis is quite simple and can be performed by any trained personnel.

Equipment and Chemicals required:

250-ml Erlenmeyer flasks
0.0575 M EDTA
50% Ammonia

100-ml graduated cylinder
Murexide indicator
Deionized Water

- 1.) Draw a 50-ml sample of the sealing solution, cooled to room temperature.
- 2.) Add 20 ml of 50% ammonium hydroxide.
- 3.) Add Murexide indicator (1 g Murexide mixed into 100 g ammonium chloride)
- 4.) Titrate with 0.0575 M EDTA from amber to red-purple endpoint.
- 5.) **575 Seal-Clean** in percent by volume = titration x 0.373

575 Seal-Clean should be maintained at 3.0 – 6.0% by volume. The maintenance addition is calculated as follows (assuming a 4.0% standard concentration):

$(4.0 - \text{actual concentration}) \times \text{Tank volume} \times 0.01 = \text{gallons of } \mathbf{575 \text{ Seal-Clean}}$

575 Seal-Clean is formulated to maintain a pH within the range of 5.5-6.0. pH should be monitored with a properly calibrated pH meter. If the pH of your solution changes significantly during use, check for drag-in from previous stages of the processing cycle. This drag-in may affect the sealing process, reducing its performance qualities. Make the necessary adjustments to minimize this contamination.

SAFETY AND HANDLING

575 Seal-Clean is mildly irritating to the skin and moderately irritating to the eyes. Read and understand the Material Safety Data Sheets before using this product. Wear eye and face protection and chemical-resistant protective clothing while handling and working with this material and its working solutions.

NON-WARRANTY

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