



## ANODAL® ETCH ADDITIVE LG POWDER

***Anodal Etch LG Powder*** is a complete formulation for etching aluminum alloys. It contains caustic soda, sequestrant and additives to enhance the bath performance and safety. The special ingredients in Anodal Etch LG Powder provide a uniform matte finish, excellent hiding of imperfections, spangle prevention and reduced metal removal.

The reduction in aluminum dissolution results in significant savings in chemical usage as well as waste treatment costs. Anodal Etch LG Powder baths also provide mist suppression which improves the work-place environment and reduces ventilation requirements.

### **EQUIPMENT**

Mild steel is satisfactory for the tank and auxiliary equipment.

### **APPLICATION**

Anodal Etch LG Powder is added directly to the etching bath as required. Since dissolution of the powder produces a great deal of heat it should be added slowly and carefully with agitation. Appropriate safety equipment including eye protection must be used and care taken against the hazards of splashing and overheating.

As with all caustic etch baths, the solution concentration must be maintained within the proper limits to provide consistent etch quality and prevent solution fallout. Higher concentrations of dissolved aluminum require increased amounts of Anodal Etch LG Powder.

For a new make-up when no dissolved aluminum is present, start at 40 g/l (5.3 oz/gal). The Anodal Etch LG Powder concentration should be maintained at 90-100% of the aluminum concentration. The aluminum concentration will reach its own equilibrium dependent upon drag-out, time, temperature, bath chemistry etc. Dumping or decanting the solution may prove unnecessary.

The bath should be operated at 120°-150° F. Anodal Etch LG Powder is designed to provide a matte finish with less etching time and lower metal removal than competitive formulations. Because of the synergistic effect of lower aluminum dissolution the actual savings in chemical usage and waste treatment costs can be significant. Anodal Etch LG Powder is compatible with most caustic etch baths and they may be converted directly. Consult a Reliant Technical Representative for specific details.

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### **CONTROL METHOD**

1. Filter a sample of the etch bath or allow to settle to a clear liquid.
2. Pipette a 5 ml sample into a 250 ml flask, then add 50 ml of water.
3. Titrate with 1.0 N Hydrochloric acid to a cloudy end point - "A".
4. To the same flask, add 3 grams (approx.) of sodium fluoride and 3 drops of Phenolphthalein Indicator. The solution will turn pink.
5. Continue to titrate until the end point remains clear for 30 seconds or more.
6. Add another 3 grams of sodium fluoride. If a red color appears, continue the titration.
7. Record the total volume of acid used - "B".

### **CALCULATIONS:**

$$A \times 8.2 = \text{g/l Anodal Etch LG Powder}$$

$$A \times 1.1 = \text{oz/gal Anodal Etch LG Powder}$$

$$(B - A) \times 1.35 = \text{g/l Aluminum}$$

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