



ANODAL® ETCH ADDITIVE LG LIQUID

Anodal Etch Additive LG Liquid is added to caustic soda to form a non-scaling aluminum etch solution that exhibits the following characteristics:

- Prevents scale formation on the tank and heating coils.
- Improves matte finishes giving a more uniform appearance.
- Eliminates the need for frequent dumping of the etch tank
- Significantly reduces caustic consumption
- Enables a reduction in the amount of metal removed for the desired gloss

PHYSICAL PROPERTIES:

Appearance:	Slightly turbid viscous liquid
Specific gravity:	1.26 (10.5 lbs/gal)

APPLICATION:

There are two distinctive methods used by the industry in running this product. In either case a new bath can be made up by adding 5 gallons Etch Additive LG and 60 gallons liquid caustic (250 lbs flake) per 1000 gallon tank volume. Running conversions can be made by adding 10 gallons product per 1000 gallon tank volume.

1. Simply run the free caustic at in the range of 40-70 g/l (regardless of the dissolved aluminum level) and add Etch Additive LG at a rate of 1 gallon for every 12 gallons of liquid caustic replenishment (70 lbs flake). This method tends consumes less caustic and provides a lower gloss finish at the expense of increased product consumption.
2. The alternative method is increase the concentration of "free" caustic as the dissolved aluminum increases in the aged bath. See the table below for target concentrations. If this method is adopted than replenishments are made by adding 1 gallon product for every 25 gallons of liquid caustic (150 lbs flake).

Dissolved Al (g/l)	0	20	40	60	80	100	120	140	160
Free caustic (g/l)	30	40	50	60	70	80	90	100	110

OTHER OPERATING CONDITIONS:

Temperature:	130° - 170° F
Immersion Time:	1 - 20 minutes as required
Agitation:	Air recommended

CONTROL METHOD:

1. Filter a sample of the etch bath through a suitable filter paper.
2. Pipette a 5 ml sample into a 250 ml flask, then add 50 ml of water.
3. Titrate with 1N Hydrochloric acid to a cloudy end point. Record "A" ml
4. To the same flask, add 3 grams (approx.) of sodium fluoride and 3 drops of Phenolphthalein Indicator.
5. Continue to titrate the solution with 1.0 N HCl until the end point remains clear.
6. Add another 3 grams of sodium fluoride & repeat. Record volume "B".

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CONTROL METHOD(CONT'D):

Calculate: **Free Caustic (g/l) = A x 8.0**
 Aluminum (g/l) = (B - A) x 1.35

HANDLING:

The handling of this product does not pose a significant hazard in itself, however the caustic bath that the product is added to does. For this reason, face shield, protective gloves, boots & apron should be used when adding this product to the process bath.

WASTE DISPOSAL:

Caustic solutions containing Anodal Etch Additive LG must be neutralized. The often used practice is to neutralize with the spent sulfuric from the anodize tank. To comply with most local ordinances the aluminum precipitate is removed by settling and subsequent de-watering by filtration.

Recommendations, notices or instructions as to handling, use, storage or disposal of this product, including its use alone or in combination with other products, or as to any apparatus or process for its use are based upon information believed to be reliable. No liability is taken with respect to any such recommendations or instructions. Sole and exclusive warranty is that products comply with published chemical and physical specifications as provided on the certificate of analysis. No other warranties, either express or implied are given.