



Better Chemistry. **Better Business.**

Etch Cleaner 6 LF

Product Code: 2002021
Revised Date: 06/28/2016

Etch Cleaner 6 LF
Alkaline Etchant For Aluminum

Etch Cleaner 6 LF is a high quality, phosphate free, strongly alkaline product, which has been formulated specifically for the simultaneous cleaning and etching of aluminum and aluminum alloys (wrought and cast).

Etch Cleaner 6 LF has been formulated specifically to provide a high reserve alkalinity for installations where long life solution is a paramount factor.

Aside from having a high reserve alkalinity, **Etch Cleaner 6 LF** has been formulated to a greater degree to minimize the scale build-up on plate coils and tank walls.

Etch Cleaner 6 LF may be used in lines which process aluminum alloys for welding, anodizing, chromating and plating.

Etch Cleaner 6 LF was formulated to meet the following specific requirements:

- Clean - remove mill oils, and, light fabrication lubricants, and stenciling inks.
- Etch - medium too heavy.
- Minimize scale build-up on tank and heating coil.
- Provide a controlled foam blanket to reduce the alkaline spray mist without causing excessive foaming.
- Wide operating temperature - may be operated at a low temperature.

OPERATING CONDITIONS

Concentrations:.....4 to 16 oz/gal (30 to 120 gms/l)
Temperature range:.....90 to 180 F (32 to 82 C)
Specific temperature range:.....120 to 140 F (49 to 60 C)

Note: The specific temperature range is the temperature where the bulk of the jobs are processed. The lower temperature can be used to obtain a fine grain etch or where energy savings are required. The higher temperatures are used when a rapid-heavy etch is required.

Time: 30 seconds to 4 minutes. The proper time and concentration will have to be determined by the degree of etch wanted.



Product Bulletin

Better Chemistry. **Better Business.**

Etch Cleaner 6 LF

Product Code: 2002021
Revised Date: 06/28/2016

Equipment: Mild steel tank and heating coil.

Ventilation: Suggested. Definitely required at operating temperatures in excess of 110 F (43 C).

TANK MAKE-UP PROCEDURE

Fill tank 2/3 full of cold water and add full amount of **Etch Cleaner 6 LF**. Mix in the cleaner and add the remainder of the water. Bring solution to desired operating temperature.

FRESH ADDITION PROCEDURE

Slowly add the powdered **Etch Cleaner 6 LF** to the heated solution of **Etch Cleaner 6 LF**. The additions of the powdered etch **Cleaner 6 LF** will raise the solution's temperature. A too rapid addition may cause the solution to "boil out" of the tank, especially at the higher temperatures.

While **Etch Cleaner 6 LF** is classified as a **Etch Cleaner**, there will be operations which may still require a pre-cleaner prior to immersion in the etch **Cleaner 6 LF** solution. Heavy oil films, if not removed first in a non-etch soak cleaner, will cause an unusual etch pattern on the aluminum's surface.

Another point to consider when selecting an alkaline pre-soak is if the rinsing is quite poor or even non-existent between the soak and the **Etch Cleaner 6 LF** solution, one should select a non-silicated soak cleaner. Carrying silicates into **Etch Cleaner 6 LF** will ultimately result in a spotty etch surface.

CONTROL PROCEDURE

Chemicals required:

- 0.5 N HCl
 - phenolphthalein indicator
 - 20% (wgt) potassium fluoride
1. Pipette 10 mls of **Etch Cleaner 6 LF** solution into a 250 ml Erlenmeyer flask.
 2. Add 50 mls of water and 5 drops phenolphthalein indicator to the Erlenmeyer flask.
 3. Titrate with 0.5 N HCl until the pink color disappears. Record the mls used.
 4. To the titrated solution add 30 mls of potassium fluoride (20% wgt) solution. The solution will become pink again.
 5. Titrate with 0.5 N HCl until the pink color disappears. Record mls used.



Product Bulletin

Better Chemistry. **Better Business.**

Etch Cleaner 6 LF

Product Code: 2002021
Revised Date: 06/28/2016

6. Add 30 mls of potassium fluoride solution again. If the pink color does not appear within 30 seconds, do not titrate any further. However, should the pink color appear, titrate again and add this figure to step 5. It may be necessary to repeat this procedure again, especially when the aluminum content in the **Etch Cleaner 6 LF** solution is high.

CALCULATIONS

Note: Use equation 1 in order to determine the active concentration of **Etch Cleaner 6 LF**.
Use equation 2 to determine the oz/gallon of dissolved aluminum in **Etch Cleaner 6 LF**.

1. (mls step 3 x 0.29) - (mls step 5 x 0.094) = oz/gallon etch cleaner 6 lf
2. (mls step 5 x 0.07) = oz/gallon aluminum dissolved in **Etch Cleaner 6 LF**

TEST KIT – FOR CONCENTRATION OF ETCH CLEANER 6LF ONLY

1. Fill sample bottle ¼ full with water. Using the syringe, transfer a ½ ml sample of cleaner in the sample bottle.
2. Add 5 drops of Phenolphthalein Indicator.
3. Add 0.72 N Hydrochloric Acid drop-wise until the pink color disappears.
4. Record the number of drops of 0.72 N Hydrochloric Acid used.

$$\text{Oz/gal Etch Cleaner 6 LF} = \text{Drops 0.72 N Hydrochloric Acid used} \times 0.286$$

WASTE DISPOSAL

Discharge to a disposal system. In order to be completely informed on the latest regulations for your area, please contact the local authorities.

CAUTION

Etch Cleaner 6 LF is an alkaline product and should be handled accordingly. Avoid skin, eye and oral contact. Wear protective clothing, gloves and goggles when handling the product. Flush exposed areas immediately with clean, cold water. Contact a doctor immediately in case of injury. Consult MSDS for details.



Product Bulletin

Better Chemistry. **Better Business.**

Etch Cleaner 6 LF

Product Code: 2002021
Revised Date: 06/28/2016

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.