



Better Chemistry. **Better Business.**

Extend Etch

Product Code: 2900005
Revised Date: 05/17/2011

Extend Etch

Extend-Etch is a phosphate free, strongly alkaline etch developed to replace the conventional alkaline aluminum etch.

Following the operating instructions of the **Extend-Etch** will enable one to operate the bath on a non-dump basis. This represents a significant cost savings in downtime, chemical consumption and waste treatment cost.

Extend-Etch is a caustic bearing product containing additives which will prevent scale buildup on the plate coil and tank walls.

OPERATING CONDITIONS

Initial makeup conc.:	5 to 6 oz/gal (37.5 to 45 gms/l)
Operating temperature:	100 to 160 F
Equipment:	mild steel tank and heating coils
Ventilation:	suggested
	Definitely required at operating temperatures in excess of 110 F (43C)

TANK MAKE-UP PROCEDURE

Fill tank 2/3 full of cold water, then add full amount of **Extend-Etch**. Mix in the product and add the remainder of the water. Bring solution to desired operating temperature.

FRESH ADDITION PROCEDURE AND MAINTAINING THE NON-DUMP SYSTEM

The key to maintaining a non-sludging-never dump system, is that the concentration of the **Extend-Etch** must be maintained at 2 oz/gal above the concentration of the aluminum content of the bath.

For example, when the aluminum content of the bath is 6 oz/gal., Then the **Extend-Etch** should be at 8 oz/gal., Or, when the aluminum content of the bath is 9 oz/gal., Then the **Extend-Etch** should be at 11 oz/gal.

In summary, the concentration of the Extend-Etch obtained from equation 1 should be a minimum of 2 oz/gal above the dissolved aluminum content (equation 2).



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FRESH ADDITION PROCEDURE

Slowly add the powdered **Extend-Etch** to the heated solution of **Extend-Etch**. The additions of the powdered **Extend-Etch** will raise the solution temperature. An overly rapid addition may cause the solution to "boil out" of the tank, especially at the higher temperatures.

While **Extend-Etch** is classified as an etch cleaner, there are Operations which might require a pre-cleaner prior to immersion in the **Extend-Etch** solution. Heavy oil films, if not removed first in a non-etch soak cleaner, will cause an unusual etch pattern on the surface of the aluminum.

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 **Extend-Etch** solution, then one should select a non-silicated soak cleaner. Carrying silicates into **Extend-Etch** will ultimately result in a spotty etch surface.

CONTROL PROCEDURE

Chemicals required: 0.5 N hydrochloric acid.
 phenolphthalein indicator
 20% (wgt) potassium fluoride solution.

1. Pipette 2 mls of **Extend-Etch** solution into a 500 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%/wt) solution. The solution will become pink again.
5. Re-zero the burette and titrate with 0.5 n HCl until the pink color disappears. Record mls used.
6. Add 30 mls of potassium fluoride solution again. If the pink color does not appear within 30 seconds, then 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 **Extend-Etch** solution is high.

NOTE: mls of step number 5 are used in equation 2 to determine "Y" and equation 3 to determine aluminum content of bath.



Product Bulletin

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DETERMINING CONCENTRATION

1. **Extend-Etch** (oz/gal) = 1.5 x (mls step 3) - Y
2. Y = mls step 5 x 0.53

INSERT Y INTO EQUATION 1 TO DETERMINE Extend-Etch CONCENTRATION

To determine amount of aluminum (metal) dissolved in bath use the following equation:

3. Aluminum content (oz/gal) = 0.35 x mls step 5

CAUTION

Extend-Etch 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.

DISPOSAL

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

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.