

Technical Data Sheet • CHEMEON® Etch 2100

Description:

An economical blended alkaline etch. Grain refiners and chelators provide a high level of performance at a reasonable cost. The etch is operated at 4 to 10 oz/gal at 120 °F to 150 °F for 2 to 10 minutes.

Operating Conditions:

Method of application:	Immersion
Concentration:	4 - 10 oz/gal (30 - 75 g/L) depending on the dissolved aluminum concentration
Time:	2 - 10 minutes
Temperature:	120 - 150°F (50 - 65 °C)
Equipment:	Mild steel construction heated with gas, steam, or electric.

The results obtained from using CHEMEON® Etch 2100 will be determined by the time, temperature, and concentration the product is used. Longer times and higher temperatures or concentrations will produce more metal removal and a faster etch.

Controlling the temperature is very important to the finished appearance of the part. Too high a temperature will lead to the etch solution drying on the part before it can be rinsed. Generally 140 -150 °F. is used for extrusions while lower temperatures are used for sheet stock.

The recommended concentration for CHEMEON® Etch 2100 is 6-8 oz/gal. at 140 °F. At lower concentrations less appealing etches are obtained. There is also the risk of fall-out at the lower concentrations.

Aluminum content is very important to deriving a uniform appearance on the parts. The bath will give the most uniform results after 20 grams per liter of aluminum has been built in the bath. Lower concentrations will produce a brighter more reflective appearance. Therefore, the bath should be maintained at above 20 grams per liter aluminum to insure a uniform appearance on all parts processed.

Solution Control:

New Bath:

1. Pipet 10 mL of a cooled sample taken from the etch tank into a 250 mL beaker.
2. Add ~50 mL of DI water and 4 drops of phenolphthalein indicator.
3. Titrate with 1.0 N HCl until the pink color disappears.
4. Record the mL of 1.0 N HCl titrated.
5. Calculation:

$$\text{CHEMEON}^{\circledR} \text{ Etch 2100 (oz/gal)} = (\text{mL of 1.0 N HCl}) \times 0.64$$

$$\text{CHEMEON}^{\circledR} \text{ Etch 2100 (g/L)} = (\text{mL of 1.0 N HCl}) \times 4.84$$

Used Bath:

1. Filter a sample from the etch bath through #54 filter paper.
2. Pipet a 10 mL sample of the clear filtered bath into a 250 mL beaker.
3. Add ~50 mL of DI water.
4. Titrate with 1.0 N HCl until the first permanent cloudiness or turbidity is detected.

NOTE: With each drop of acid some precipitate will be formed but this will re-dissolve on shaking. When the precipitate does not dissolve the end point has been reached.

5. Record the mL of 1.0 N HCl used to reach the permanent precipitate.
6. Calculation:

$$\text{CHEMEON}^{\circledR} \text{ Etch 2100 (oz/gal)} = (\text{mL of 1.0 N HCl}) \times 0.64$$

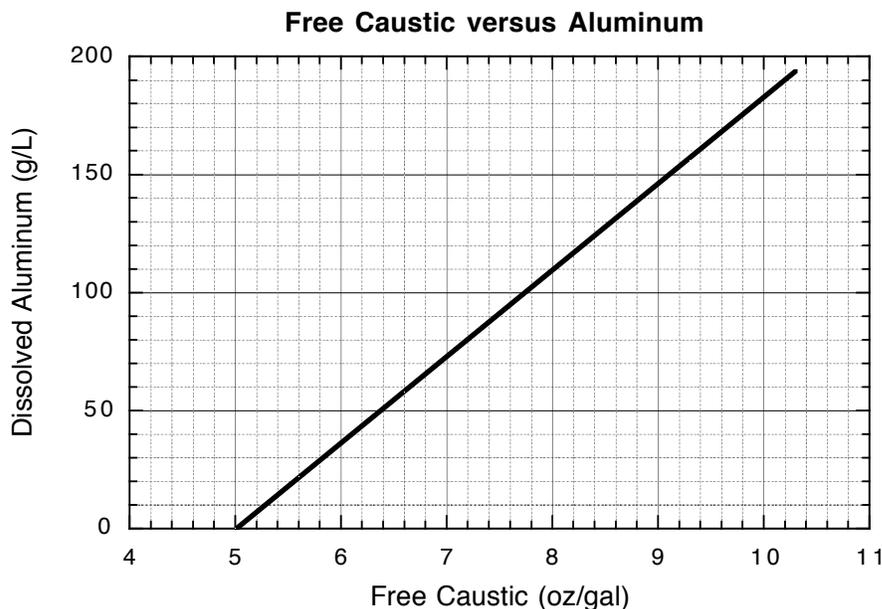
$$\text{CHEMEON}^{\circledR} \text{ Etch 2100 (g/L)} = (\text{mL of 1.0 N HCl}) \times 4.84$$

7. To the above sample add 4 drops of phenolphthalein indicator.
8. Titrate with 1.0 N HCl until the color changes from pink to colorless.
9. Record the mL of 1.0 N HCl titrated.
10. Calculation:

$$\text{Concentration of Aluminum (g/L)} = (\text{mL of 1.0 N HCl}) \times 2.67$$

$$\text{Concentration of Aluminum (oz/gal)} = (\text{mL of 1.0 N HCl}) \times 0.36$$

The CHEMEON[®] Etch 2100 concentration correlates with the free caustic concentration and should increase as the concentration of dissolved aluminum increases according to the graph below.





2241 Park Place, Suite B
Minden, NV 89423
(888) 782-8324
www.CHEMEON.com

Physical and Safety Data:

CHEMEON® Etch 2100 is a white free-flowing powder.

CHEMEON® Etch 2100 is highly alkaline and very corrosive. Avoid contact with hands, eyes or skin. In case of contact, flush immediately with water for 15 minutes. If the eyes are involved, flush with water and seek medical attention. Do not take internally.

Packaging:

500 pound drum

Storage:

CHEMEON® Etch 2100 should be stored in a cool, dry area away from acidic material. Keep drums closed when not in use, as CHEMEON® Etch 2100 will absorb moisture from the air.

Waste Disposal:

CHEMEON® Etch 2100 may require neutralization to a specified pH range depending on Federal, State, and local waste treatment regulations.

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