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WARNING:

**This chemical is formulated
for industrial use only**

Contact with skin or clothing or other improper handling or use of this product may result in bodily harm or other damage. Before using or mixing the contents with other substances, all labels applied to container, the applicable Technical Data Sheet and Material Safety Data Sheet should be read and specific instructions and precautions followed to assure correct use and personal safety.



PRELUDE EA15

LONG LIFE CAUSTIC ETCH ADDITIVE

INTRODUCTION

PRELUDE EA15 is a concentrated additive for caustic soda etching solutions that will avoid the precipitation of aluminium hydroxide stone in the etch bath.

It can be added to the bulk caustic holding tank, dosed or added manually when caustic is added to the bath.

The addition of PRELUDE EA15 to the etching bath provides a consistent fine grain satin-matt finish and avoids the "pin burn" characteristic associated with standard etching baths running high levels of dissolved aluminium.

PRE ETCH TREATMENT

Aluminium should be cleaned in the appropriate PRELUDE cleaner to remove oils and other contaminants.

Poor cleaning will result in differential etching.

POST ETCH TREATMENT

Rinse immediately in fresh water, prior to desmutting.

MAKE-UP

Bulk 1000 KG 46% Caustic Soda Solution
67 KG (57 L) PRELUDE EA15

Bulk make-up must be thoroughly mixed.

Bath make-up and control

Initially 60 g/Litre Caustic Soda
7.3 g/Litre PRELUDE EA15
or equivalent from bulk make-up.

Equilibrium Point 80-100 g/Litre Caustic Soda
10.2 g/Litre PRELUDE EA15
or equivalent from bulk make-up.

● *Bringing the Best Products to the Surface* ●

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OPERATING PARAMETERS

<u>Temperature:</u>	38-70°C (Ideally 60-70°C)
<u>Etch Time:</u>	3-20 minutes (Depending on desired finish)
	Air agitation is recommended.

ANALYTICAL METHOD

<u>Reagents</u>	HCl 1N solution
	Phenolphthalein, as indicator
	Sodium fluoride

Procedure

- about 100 ml of distilled water
- 10 ml of etch bath solution
- a few drops of phenolphthalein
- titrate with 1N HCl solution until pink colour disappears. Record ml of titrate as "A".
- rezero the burette
- add 10 gms of sodium fluoride
- re-titrate until pink colour disappears
- add a further 5 gms of sodium fluoride
- if pink colour appears continue titrating until end point. Record ml of titrate as "B".

Calculation

$$1.58 (2.8A - B) = \text{g/Litre NaOH}$$

$$B = \text{g/Litre dissolved Aluminium}$$

SUGGESTED TANK OPERATION

1. Initially

Maintain etch bath at 60 g/L NaOH from bulk mixture

OR

Add 140 gms of PRELUDE EA15 for every KG of NaOH flake or pearl added to bath for make-up and replenishment.

2. First Adjustment

When dissolved aluminium reaches 40 g/L increase NaOH concentration from bulk mixture to 70 g/L.

OR

Increase NaOH concentration to 70 g/L adding an extra 140 gms of PRELUDE EA15 for every KG of NaOH flake or pearl added.

Maintain this concentration.

3. Second Adjustment

When dissolved aluminium reaches 70 g/L increase NaOH concentration from bulk tank to 80 g/L.

OR

Increase NaOH concentration to 80 g/L adding 140 gms of PRELUDE EA15 for every KG of NaOH flake or pearl added.

Maintain this concentration. The etch bath will reach an equilibrium point somewhere between 100-130 g/L aluminium.

PRECAUTIONS

Effective fume extraction should be used to remove hydrogen gas evolved during etching.

PRELUDE EA/15 is alkaline and therefore protective clothing including goggles, gloves and apron are recommended when handling. Any splashes should be rinsed immediately with clean water. Medical attention should be sought as soon as possible.