BONDERITE

BONDERITE C-AK FE-17L AERO

Known as TURCO FORM ETCHANT 17 L
November2014

PRODUCT DESCRIPTION

BONDERITE C-AK FE-17L AERO provides the following product characteristics:

Technology	Metal Pretreatment
Product Type	Alkaline Cleaner Etchant
Application	Immersion

BONDERITE C-AK FE-17L AERO is a specially compounded liquid etchant for use on high copper aluminium alloy in the Chem-Mill Process. BONDERITE C-AK FE-17L AERO has also been used with other aluminium alloys with superior results.

Application Areas

BONDERITE C-AK FE-17L AERO is a chemical milling etchant.

BONDERITE C-AK FE-17L AERO offers these features:

1. Fast etch rate.
2. Excellent surface finish.
3. Minimizes and tends to polish out flow lines and channelling in aluminium.
4. Can improve the surface finish of some alloys from an RMS of 100-200 to 35-50 RMS.
5. Supplied in liquid form for ease of handling.

TECHNICAL DATA

Appearance	brown liquid
Density, g/ml	1.36

DIRECTION OF USE

Preliminary Statement
Prior to use it is necessary to read the **Material Safety Data Sheet** for information about precautionary measures and safety recommendations. Also, for chemical products exempt from compulsory labeling, the relevant precautions should always be observed. Please also refer to the local safety instructions and contact Henkel for analytical support.

Use instructions

Equipment:

Tank: Mild steel, no lining required.

Agitation: Agitation is required only during addition of chemicals or water, or while heating the solution to operating temperature.

Solution make-up

BONDERITE C-AK FE-17L AERO 50 % by volume, N1=2123, N2=0.8-1.2

Temperature 102 - 108° C

CHARGING AND OPERATING PROCEDURE

1. Fill tank to 1/2 of working capacity with water.

2. Add slowly and carefully required volume of BONDERITE C-AK FE-17L AERO . (NOTE: Continuous and vigorous agitation should be provided during the charging cycle).

3. Add water to operating level.

4. Agitate the solution until all solid material has been dissolved. This solution will have a N1=21-23 and N2=0.8-1.2.

5. Add heat to maintain an operating temperature of 102 - 108° C.

6. Suspend parts vertically or horizontally depending on part configuration. Rotate in the vertical plane as necessary.

7. Agitate solution during the etching cycle only. (NOTE: Continuous agitation should be minimized since it has a deteriorative effect upon the etchant; CO2 pick-up).

8. Etch rate at recommended concentrations are approximately 2.0 - 2.8 Mil/Side/Minute. Excessive etch rates cause deleterious side effects on the part.

9. Immediately after etching, rinse parts in cold water and remove smut, followed by a final water rinse.

10. A daily titration of the etchant solution will guarantee satisfactory performance and extended tank life.

Control Procedure for BONDERITE C-AK FE-17L AERO

Saphonyx

Apparatus

- pH meter
- Magnetic stirrer
- Filter paper (Whatman No.2 or equivalent)
- Glass funnel and holder
- 250 ml beaker
- Pipette 5 ml
- Buret

1. Obtain a sample from tank and allow cooling to room temperature.

2. Take a 5.0 ml sample of bath.

3. Dilute to 50 ml with distilled water.

4. Titrate to pH 11.4 using 1.0 N H_2SO_4 and note as ml (A)

5. Continue the titration with 1.0 N H_2SO_4 until a pH of 8.2 is reached.

Calculation

- N1 = Number ml. 1 N H_2SO_4 to reach pH 11.4.
- N2 = Number ml. 1 N H_2SO_4 to go from pH 11.4 to 8.2.

Rejuvenation

1. Maintain N1 between 18-25 and N2 between 1.0-18.

Storage

Temperature, °C	0 to 40
Shelf-life (in unopened original packaging), months	24

Classification

Please refer to the corresponding **Material Safety Data Sheets** for details on:

Hazardous Information
Transport Regulations
Safety Regulations

ADDITIONAL INFORMATION

Disclaimer

Note:

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.
Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:
In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:
The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.
Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Corporation, Resin Technology Group, Inc., or Henkel Canada Corporation, the following disclaimer is applicable:
The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

Trademark usage

Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 0.0

Saphonyx