



## Product Data Sheet

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**PRODUCT #: N8023**

# ACCUCLEAN™ NF

Acid Copper Cleaner

**DESCRIPTION:** A non-foaming, acidic cleaner formulated to remove oxide and tarnish from copper surfaces. ACCUCLEAN™ NF is sprayable at room temperature and has a very low copper etch rate. It can be used in conveyORIZED applications for cleaning copper prior to solder mask application, as an activator in automatic tab plating machines, or wherever a sprayable copper cleaner is needed. ACCUCLEAN™ NF is supplied in concentrated form.

**BENEFITS:**

- Leaves copper surface activated for adhesion of plated metals
- Low etch rate-less than 1 millionth inch per minute
- Rinses easily with warm water

**EQUIPMENT:** Equipment should be constructed of polypropylene, or PVC. Heaters should be quartz or Teflon.

**SPECIFICATIONS:** **Density:** 1.07 gm/ml, 8.9 lbs./gal.  
**pH at 10% :** <1  
**Flash Point:** None  
**Shelf life:** Indefinite

**MAKE-UP/**

**OPERATING**

**INSTRUCTIONS:**

**Concentration:** 10% by volume  
**Tap Water:** 90%  
**Temperature:** 70° - 90°F  
**Time:** 1-5 minutes

**Procedure:**

1. Fill tank ¾ full with Tap water.
2. Add the required amount of ACCUCLEAN™ NF and mix well.
3. Adjust to final volume with Tap water and mix well.

**CONTROL**

**PARAMETERS:**

To achieve optimum results, the bath should be maintained at the following concentration

<u>ACCUCLEAN™ NF Acid Cleaner</u>	<b>OPTIMUM</b>	<b>RANGE</b>
ACCUCLEAN™ NF Concentration	10%	7-12%

**ANALYSIS &  
REPLENISHMENT:**

**ANALYSIS PROCEDURE FOR ACCUCLEAN™NF**

**Determination of concentration of ACCUCLEAN™NF**

**Equipment:** 25 ml volumetric pipette                      pH 7.0 buffer  
25 ml burette    pH 10.0 buffer  
250 ml Beaker    pH Meter

**Reagents:** 1.0N sodium hydroxide (NaOH) – Commercially available from chemical supplier.

**Procedure:**

1. Pipette 25ml of ACCUCLEAN™NF working solution into a 250 ml beaker. Add 50 ml D.I. water.
2. Calibrate pH meter and probe with 7.0 and 10.0 buffer solution.
3. Titrate with 1.0N sodium hydroxide to a pH of 10.4. Record the number of mls.

**Calculation:**                      mls of NaOH X N of NaOH X 1.27 = % ACCUCLEAN™NF

$$\left[ 10 \% - \% \text{ ACCUCLEAN}^{\text{TM}}\text{NF} \right] \times 3785 \times \text{Tank volume} = \text{mls of ACCUCLEAN}^{\text{TM}}\text{NF}$$

from analysis    in gallons    to add.

**BATH LIFE:** Maintain concentration according to analysis. Solution should be considered spent when pH exceeds 2.5.

**CAUTIONS:** There is a slight increase in etch rate as copper concentration builds up. Etch rate should be determined by standard weight loss tests versus copper content. ACCUCLEAN™NF is acidic, glasses or goggles and gloves should be worn when handling this product. In case of contact with skin or eyes, flush immediately with water and obtain medical attention. For further information refer to Material Safety Data Sheet.

**DISPOSAL:** To treat spent ACCUCLEAN™NF, add caustic to raise the pH to 7.0-8.0. Add 5% ferrous sulfate solution and allow precipitate to form, to remove complexed copper. Let settle for four hours and decant. Dispose of precipitated metals in accordance with all local, state and federal regulations.

This product should be used only for its intended purpose. The information stated above is based on our laboratory tests and experience, and is accurate to the best of our knowledge. Since actual use is beyond our control, the recommendations or suggestions are made without warranty, expressed or implied.