

# System II (Solder Stripper)

**System II solder stripper system** is a two-step liquid acidic product developed for dissolving solder from circuit boards and contact fingers by immersion. Solder stripping occurs mainly in the Alpha component, while the Delta component removes the adhering tin compounds.

While System II solder stripper has been formulated to have a minimal attack on the underlying copper, care should be taken to minimize exposure time in the Delta component.

Product name 2289 will not remove heavy scale from stainless steel alloys. When used as recommended will not etch most aluminum, stainless steel, brass, copper, monel or other nickel alloys.

Product name 2289 can be used for part-on-part burnishing and vibratory finishing of copper alloys, stainless steel, Monel, and other nickel based alloys / substrates.

## Features & Benefits

Fast stripping rate	Higher productivity
Minimal attack on copper	Less rejects; lower cost
Operate at room temperature	Lower energy cost
Exceptionally long life	Lower total cost of use
Peroxide free	Stable, safer to use

## Operating Conditions

Concentration	Alpha: 100%, Delta: 50% – 100%
Temperature	65°F – 85°F Do not heat above 100°F
Immersion time	Alpha: 2 – 4 minutes. Delta: 1 minute
Equipment	PVC, Polyethylene, or Koroseal- do not use glass or fiberglass containers with Alpha.
Control	When the stripping rate becomes excessively long, discard the bath.

### Typical processing cycle

1. Immerse circuit boards into System II Alpha, full strength, room temperature for enough time cut through the tin/lead down to a whitish smut.
2. Rinse in cold water, rinse, 1 to 2 minutes.
3. Immerse in 50% to 100% System II - Delta, room temperature to 90° F. for no longer than 1 minute. Longer dwell times may cause an attack on copper.
4. Rinse in cold water for 1 to 2 minutes.
5. Dry.

Caution: As the stripper contains Nitric Acid, various oxide fumes of nitrogen may be generated in stripping. Be careful to avoid breathing the fumes as they may be toxic. Use ventilation if possible.

## Titration Method

Alpha (by titration) when used at 100% concentration:

1. Pipette a 5 mL sample of the operating solution into a 250 mL Erlenmeyer flask. Add 75 to 100 mL of water.
2. Add 5 to 10 drops Phenolphthalein indicator.
3. Titrate with 1.0 N Sodium Hydroxide from a colorless to pink endpoint.
4. Record mL used.

Calculation

$$\% \text{ Activity} = \text{mL } 1.0 \text{ N NaOH} \times 3.73$$

Note: The solution should not be run below 75% concentration. Since it is replenished at 100%, large volume additions are required to bring the concentration up.

An alternative method of control is to measure the copper concentration by atomic absorption. When the copper content gets to 1000 ppm (1 gram/liter), the working solution should be discarded.

Delta can be controlled by copper content via atomic absorption as well. However, since the major component is ferric chloride, this would be more prone to attack copper and therefore 500 ppm of copper should be considered as spent. A titration of this is very difficult since ferric hydroxide would begin to precipitate immediately and distort any color change.

## Waste Disposal

Neutralize System II solder stripper solutions to a pH of between 6.0 to 8.0 with soda ash or caustic soda. When adding either of the alkaline materials add slowly to avoid splashing. Do not use a glass pH electrode to check for the pH range.

Small quantities of sodium sulfate may have to be added to precipitate the remaining lead. After all the metallics have been precipitated, the solution may be discharged to a settling tank.

Another option is to have the spent System II solder stripper solution taken away by a permitted waste hauler to an approved site for disposal.

In all cases, please check with the local authorities for the specific restrictions in your area.



## Product Bulletin

Product Name: System II (Solder Stripper)  
Product Code: 2701005 (Alpha)  
Product Code: 2701010 (Delta)  
Revision Date: May 28, 2025

### Caution

System II solder stripper components are strongly oxidizing acidic products. They should be handled accordingly. Avoid skin, eye and oral contact. Wear protective clothing, gloves and goggles when handling the product. Also avoid fume inhalation. Flush exposed areas immediately with clean, cold water. Contact a doctor immediately in case of injury.

**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.

## Our People. Your Problem Solvers.

For more information on this process,  
please call us at 203.756.5521 or email: [techservice@hubbardhall.com](mailto:techservice@hubbardhall.com)

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