



HN502™ CONDITIONER

Introduction

HN502™ Conditioner is a non-chelated alkaline liquid that removes fingerprints, light oxidation, and shop soils from copper surfaces, and conditions plastic and glass surfaces to be activated using the STS DIRECT™/FCT Plating Process.

Operating Conditions

CONCENTRATION

HN502S™ 0.75 - 1.25% v/v
1.0% optimum

HN502CS™ 0.4% - 0.8% w/v
0.6% optimum (rigid)
0.4% optimum (flex)

TEMPERATURE

rigid material 165 - 178°F
176°F optimum

flex material 120-140°F

DWELL TIME

5 - 10 minutes (10 minutes preferred)

RINSE TIMES

Dual cascading counterflow rinse – 30 seconds per station

Make Up and Operating Procedures

1. Fill freshly cleaned tank 90 – 95% full with deionized or distilled water.
2. Add the required amount of HN502CS™ (6g/l or 22.7g/gal.) and stir to dissolve.
3. After HN502CS™ is dissolved, add the required amount of HN502S™ (10 ml/l or 37.8 ml/gal.) and stir to mix the solution. For most applications, 1 gallon HN502S™ per 100 gallons of bath is satisfactory.
4. Top tank to operating level with deionized water.

Heat the solution to operating temperature (165 – 178 °F for rigid material). **Consult with service representative about operating temperatures for treating boards with acrylic adhesive and other exotic materials. Typically, the concentration of HN502CS is decreased to 4 g/l and the operating temperature is between 120 and 140 °F for flex materials and acrylic adhesives.**

Use a recirculating pump or mechanical mixer to insure uniform heating of the bath with no hot or cold spots.

Circulation is essential to keep conditioner dispersed.

Agitate parts horizontally so that the conditioner is forced through holes and into blind vias. (Ensure that agitation is adequate to remove all air bubbles from holes or vias.) Mechanical vibrators at low frequencies can be useful when processing panels with small diameter holes. A rack agitator with a 2-4 inch stroke operated at 12-15 strokes per minute is normally satisfactory. After treating for 10 minutes, remove parts from the tank allowing excess conditioner solution to drain back into the tank. **DO NOT** allow parts to become completely dry. Immerse parts in dual cascade counterflow rinse of street water for 30 seconds in each rinse station. **Do not rinse with deionized or RO water.** Temperature of the incoming rinse water should be 50-100°F. Remove parts from rinse and immediately transfer to the HN503™ Pre-Dip solution.

Control Data

Shop Level Control

When the conditioner solution is heated to its normal operating temperature (165~178°F), the solution will become cloudy. This is normal. If cloudiness does not occur when the solution is heated, check the concentration levels (HN502CS – 0.6% and HN502S – 1.0%) and bring bath back to full strength.

It is normal for the solution to turn greyish with use. This will not effect the function of the bath as long as the solution is operated according to the bath recharging cycle. Avoid prolonged continuous use of the bath without recharging.

Replenishment

Average normal consumption of HN502S component occurs at a rate of 0.5 ml/surface square foot of production. Daily analysis will ensure optimum conditioner levels are maintained. Adjust the additions of HN502S based on shop practices and results of daily analyses.

Bath Recharging Cycle

Discard the entire bath and remake operating bath once per week under normal conditions. Small shops with infrequent use may find that it is not necessary to dump the bath weekly. Large production on multiple shifts may require more frequent changes.

Equipment

Tanks: polypropylene or 304 stainless steel

Do not use CPVC or PVC for tanks, plumbing or any other fittings in the tank. Do not use polypropylene copolymered with other plastics.

Heaters: 304 Stainless steel or Teflon heaters are acceptable

Filtration: Not required (Consult service representative if desired.)

Solution agitation: Polypropylene or stainless steel pumps or mechanical mixer with a stainless steel shaft and polypropylene or stainless steel propellers.

Handling and Safety

The working bath and/or its components contain alkaline ingredients that can be corrosive to skin and eyes. Protective clothing such as impervious gloves, aprons, boots and chemical goggles should be worn when handling this material. In case of accidental contact, flush immediately with fresh water. Remove contaminated clothing and wash before wearing again. For eye contact, flush with fresh water for 15 minutes and seek medical attention at once.

The working bath and/or its components can be harmful if swallowed or inhaled. Avoid ingestion and breathing vapors or mists. If ingestion occurs, contact physician immediately; do not induce vomiting unless instructed to do so by physician. **READ MSDS BEFORE HANDLING, USING, OR STORING COMPONENTS OR WORKING BATH.**

The information and recommendations of Solution Technology Systems/FCT concerning this product are based on laboratory tests and experience and to the best of our knowledge and belief are true and accurate. Since conditions of actual use are varied and beyond our control, any recommendations or suggestions are made without warranty expressed or implied.