



AT-701 Copper Anti-Tarnish

DESCRIPTION

AT-701 contains a concentrated blend of copper oxide protection agents. It is added to the final rinse waters and will provide a temporary tarnish protection for copper.

The **AT-701** product has been formulated to remove light copper oxides and leave behind a chemically bonded anti-tarnish organic film. This clean protective surface will allow better bonding of dry film and other photo resists to the copper surface. The treated surface will prevent surface oxidation, tarnishing and staining. **AT-701** does not contain any chromates or waxes, and can easily be removed with a mild surface etch.

OPERATING PARAMETERS

Make-Up	0.5% to 1.0% by volume AT701 diluted with water optionally, 3-5% sulfuric acid by vol
Temperature	75-140°F (24-60°C)
Immersion Time	20 seconds to 2 minutes
Process	Batch Tank or Spray
Agitation	Advised, for through hole protection
Ventilation	Advised
Tanks	Polypropylene, Polyethylene
Racks, Baskets	Plastisol Covered Steel, Stainless Steel
Heaters	Quartz, Stainless Steel, Teflon Coils

PHYSICAL PROPERTIES

Specific gravity	1.00-1.02
Appearance	Clear Amber Yellow Liquid
pH (1% solution)	<3
Odor	Mild vinegar
Flash Point	140C (OT) T.C.C



CONTROL PROCEDURES

The panels should be cleaned and well rinsed prior to being immersed in **AT-701**. As an option, sulfuric acid can be added to the bath to enhance the neutralization and oxide removal power of the **AT-701** bath

Avoid the contamination from drag in of alkaline electroless copper. The **AT-701** working solution should be discarded and replaced with fresh solution when the copper surface exhibits no water break. Approximately 500 square feet of copper laminate can be treated per working gallon of **AT-701**. Replenishments to the solution are not recommended.

ANALYSIS

Analysis based on water break, which is a visual test.

SAFETY AND STORAGE

AT-701 is an acidic solution containing organic acids and surface conditioners. Avoid breathing vapors. Use in a well-ventilated area. When handling concentrate or working solution wear protective clothing, gloves, and chemical safety goggles. In case of skin contact, remove contaminated clothing and flush affected area with plenty of cold water. In case of eye contact, flush immediately with plenty of cold water and seek medical attention immediately.

Store **AT-701** in its original container. Keep away from direct sunlight and temperature extremes. Protect from freezing.

WASTE TREATMENT

AT-701 contains organic acids and organic surface conditioners. In the process of cleaning copper clad material, some copper may be removed and dissolved in solution. The spent working solution of **AT-701** may be treated by adjusting the solution's pH to above 10 with dilute caustic soda. Allow the precipitate to settle. Filter the solution and make a final pH adjustment of the solution to between 6 and 8 with dilute sulfuric acid before sending the spent solution to the chemical sewer. Consult with local officials for further waste disposal regulations. Please ask a Florida CirTech technical sales rep. for more information regarding waste treatment of this chemistry and our complete line of waste treatment line if additional help or information is desired.

MISCELLANEOUS

Available in 5-gallon pails and 55 gallon drums. Consult MSDS for additional information.