TECHNICALLY SPEAKING

ITW Chemtronics
8125 Cobb Center Drive
Kennesaw, GA 30152

Tel: 800-645-5244

Fax: 770-423-0748

Technical Support:

800-TECH-401

or

mwatkins@chemtronics.com

Website:
www.chemtronics.com

Solder Resist Repairs Using CircuitWorks Overcoat Pen

Each month I get a number of inquiries to Technical Support, regarding the use of the CW3300G green Overcoat Pen in repairing chips and scratches in the permanent solder resist on circuit boards. The description in our catalog states that the green overcoat pen “repairs permanent solder mask”. Unfortunately, many of our customers take this statement to mean that the CW3300 material is itself a permanent solder mask!

Permanent solder resist (the green background surface you see on most circuit boards) is a very tough, durable epoxy or epoxy-acrylate coating. Resist coating is usually a one or two-part liquid that is coated onto the copper surface of the PCB by a variety of methods, and then dried. Resist material also comes in a dry-film form, which is applied to the copper surface using heat and pressure in a lamination process. Such resist coatings are permanent and are not easily removed, but they can become chipped or scratched during shipping and further processing.

Board manufacturers, wishing to improve the appearance of the boards, need a material that can easily repair any chips or scratches in the permanent resist coating, improving the appearance of the finished board. Many of our customers take the statement in our catalog to mean that CW3300G is such a permanent resist repair material, in a convenient pen applicator. They first apply the CW3300G to cover chips and scratches in the permanent resist, and then attempt to solder components onto the board. Of course the CW3300G burns up when they pass the board through the wave solder or re-flow oven, leaving an undesirable residue on the boards, which must be removed.

CircuitWorks Green Overcoat Pen, CW330G, can be used to cover chips and scratches in the permanent resist layer, returning the board to its original appearance. as long as it is used as a **final** step in processing the board. Please stress to your customers that CW3300G is a green-tinted acrylic **conformal coating**. Acrylic conformal coating is applied to the **finished** circuit board to protect board components from moisture and provide electrical insulation between circuit traces. CW3300G is **not** an epoxy resist material and does not have the same properties of durability and permanence as a permanent solder resist. It will decompose at temperatures above 270 °F, and therefore should only be applied to the board after all soldering has been done.

Michael Watkins
Technical Support