OS-251 Solder Stripper & Copper Brightener

DESCRIPTION

OS-251 Solder Stripper and Copper Brightener is the renewable second step in the two-step, non-peroxide, solder stripping process. The two-step process eliminates problems typically associated with peroxide-based solder strippers such as exotherm, attack on exposed laminate, generation of acid fumes and mists, and difficult waste treatment. OS-251 is non-chelated and free from fluorides so it can be readily waste treated by simple hydroxide precipitation methods.

OS-251 is specially formulated to be renewable using the Regeneration Process*. By making small additions based on simple analysis, OS-251 solutions can be restored to full strength. Frequency of recharging is reduced, lower costs are realized, and waste treatment is minimized.

OS-251 contains antioxidants that retard tarnishing of stripped parts.

OPERATING PARAMETERS

Concentration	50 to 100% by volume
Temperature	60°F to 120°F
Time	10 seconds to 2 minutes

PHYSICAL PROPERTIES AND OPERATING PROCEDURES

Place required amount of water, if any, in tank. Add required amount of OS-251 and mix well. For most applications, full strength OS-251 is recommended. Immerse parts in OS-151, OS-201, or other suitable first step solder stripper for 1 to 5 minutes as required to remove the tin or solder deposit and expose the light gray copper/tin intermetallic layer. Remove parts from tank and rinse in clean water. Dip or spray rinsing is acceptable. Immerse parts immediately in OS-251 solution for 10 seconds to 2 minutes as required to remove the gray intermetallic layer and expose the underlying copper. Remove parts from tank and rinse with clean water. Dip or spray rinsing is acceptable. Dry parts immediately to prevent water spotting.

CONTROL PROCEDURES

ANALYSIS AND PATENTED REJUVENATION PROCEDURE

Concentration Based on Total Acidity

1. Place a 5 ml sample into a 100 ml beaker.
2. Add approximately 40 ml deionized or distilled water.
3. Titrate with 1.0 N sodium hydroxide on a previously standardized pH meter to a pH of 10.0.
4. Calculations: mls 1.0 N sodium hydroxide X 5.32 = % OS-251.

Rejuvenation Additions Based on Oxidizer Concentration (Patented)

1. Place a 5 ml sample of OS-251 solution into a 250 ml beaker.
2. Add approximately 50 ml deionized or distilled water.
3. Add approximately 20 ml of 20% sulfuric acid.
4. Add 5 drops of ferroin indicator.
5. Titrate with 0.10 N ceric sulfate to a blue endpoint.
6. Calculations: ml 0.10 N ceric sulfate x gallons of bath x 2.0* = ml of 50% hydrogen peroxide to be added.

* The factor should be 3.5 if using 30%, or 3.0 if using 35% hydrogen peroxide.

Carefully add the calculated amount of peroxide and blend thoroughly into the bath. All of the peroxide added in accordance with this procedure is completely consumed in the rejuvenation of the oxidizer. There will be no residual peroxide remaining in the bath after rejuvenation is complete.

As OS-251 bath is used, constituents other than oxidizers are consumed or lost to dragout. To keep the bath in balance, the rejuvenation process is typically performed only about twice.

Many thermal cured solder masks can be successfully applied to OS-251 treated copper surfaces without abrasive scrubbing before application of solder mask. Most ultraviolet cured solder masks require abrasive scrubbing of the OS-251 treated copper surface before application of the solder mask.

SAFETY AND STORAGE

PVC, PVDC, polypropylene, polyethylene, Teflon, and glass maybe used in contact with OS-251 solutions. Teflon coated or quartz heaters are acceptable. Do **not** use stainless steel heaters in contact with OS-251 solutions.
OS-251 contains acidic ingredients that are corrosive to skin and eyes. Wear eye protection and impervious gloves when handling. In case of skin contact, flush immediately with water. In case of eye contact, flush

immediately with water for 15 minutes and seek medical attention. Avoid breathing mists or vapors. Harmful if swallowed.