

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002

DateRun: 08/27/2002

Experimenters: Jason Marshall, Heidi Wilcox

ClientType: Electronics Manufacturer

ProjectNumber: Project #2

Substrates: Electronics

PartType: Part

Contaminants: Fluxes, Solder

Cleaning Methods: Ultrasonics

Analytical Methods: Visual

Purpose: To clean client supplied parts using successful cleaners

Experimental Procedure: Five products from the previous trial were used to clean several supplied parts. Three products were used at full strength and the two aqueous products were used at 10%, diluted with DI water in 600 ml beakers. Four products were degassed for 5 minutes in a Crest 40 kHz ultrasonic tank and the fifth product was degassed in a Branson 40 kHz ultrasonic tank. Four small boards were cleaned in the Crest unit, and one large board was cleaned for 5 and 10 minutes in the Branson tank. Parts were dried using air blow off for 2 minutes at room temperature. Parts were initially viewed for cleanliness and then sent back to the client for further inspection.

Results: Most of the products appeared to remove the flux/solder from the circuit boards. The following are the observations made during cleaning

Table 1. Visual Inspection

| Cleaner | Observation | Part Size |
|-------------|--|---|
| Bio T Max | Flux could still be seen on the board | Small |
| DS-108 | Visually clean, one of the better cleaners | Small, medium (cleaned in Branson unit) |
| Ionox HC 2 | Did a good job of removing the flux | Large board (Branson unit) |
| SWR One | Visually clean, one of the better cleaners | Small |
| Beyond 2005 | Did a good job of removing flux | Small |

Summary:

| Substrates: | | Electronics | | | |
|----------------------|---------------------|----------------|-------------|-------------------------------------|---------------|
| Contaminants: | | Fluxes, Solder | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Bio Chem Systems | Bio T Max | 100 | | <input type="checkbox"/> | |
| Dysol | DS 108 Wipe Solvent | 100 | | <input checked="" type="checkbox"/> | |
| Kyzen Corporation | Ionox HC 2 | 100 | | <input checked="" type="checkbox"/> | |
| SWR Corporation | SWR One | 10 | | <input checked="" type="checkbox"/> | |
| Today & Beyond | Beyond 2005 | 10 | | <input checked="" type="checkbox"/> | |

Conclusion: All parts were sent back to client for further cleanliness analysis.