

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1999  
 DateRun: 11/02/1999  
 Experimenters: Jason Marshall  
 ClientType: Bellows Mfr  
 ProjectNumber: Project #1  
 Substrates: Brass  
 PartType: Coupon  
 Contaminants: Fluxes, Resins/Rosins  
 Cleaning Methods: Immersion/Soak  
 Analytical Methods: Gravimetric

Purpose: To further evaluate the two semi-aqueous cleaners from the previous trial.

Experimental Procedure: The semi-aqueous products selected for testing in the previous trial were used in the experiment at full strength and room temperature. Six preweighed brass coupons were coated with the flux and placed into an oven and dried for one hour at 100 F. After cooling to room temperature coupons were weighed again. Three coupons were cleaned for 5 minutes in a beaker using stir bar agitation. Coupons were rinsed in DI water at room temperature for 30 seconds and dried using a Master Appliance Corp, Hot-air gun model HG-301A at 500 F for one minute. After the coupons cooled to room temperature, a final clean weight was recorded and cleaning efficiencies were calculated. Cleaning was to be performed again for 10 minutes.

SUBSTRATE MATERIAL: Brass Coupons 260

CONTAMINANTS: Kester Solder 1544 Rosin Flux-(Ethanol CAS#64-17-5;2-Butanol CAS#78-92-2\*;Modified Rosin CAS#8050-09-7)

CONTAMINATING PROCESS USED: Coupons coated using hand-held swab and then dried in an oven at 100 F for one hour.

Results: The Inproclean 4000 T was very successful in removing the flux from the brass coupons. Nearly 100% of the contaminant was cleaned off of the samples after five minutes. The Bio-T 300B performed slightly better than the 5% solution evaluated in trial 1 (6% removal). Cleaning the coupons for an additional five minutes resulted in a substantial increase in efficiency for Bio-T 300 B, yet the effectiveness was below 60%. Table 2 lists the results for the cleaning performed.

Table 2. Cleaning Results

	Inproclean 4000 T		Bio-T 300B	
	5 minute	10 minute	5 minute	10 minute
Coupon 1	99.82	Not Tested	25.76	57.13
Coupon 2	99.62	6.16	55.41	
Coupon 3	100.24	13.75	61.19	
Average	99.89	15.22	57.91	

Summary:

<b>Substrates:</b>		Brass			
<b>Contaminants:</b>		Fluxes, Resins/Rosins			
<b>Company Name:</b>	<b>Product Name:</b>	<b>Conc.:</b>	<b>Efficiency:</b>	<b>Effective:</b>	<b>Observations:</b>
Oakite Products	Inproclean 4000 T	100	99.82	<input checked="" type="checkbox"/>	
Bio Chem Systems	Bio T 300 B	100	57.91	<input type="checkbox"/>	

Conclusion: Increasing the concentration of the semi-aqueous products increased the efficiency substantially for Inproclean 4000 T and only marginally for Bio-T 300B. Lengthening the cleaning time played a larger role in increasing the efficiency of Bio-T 300B.