

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2001  
DateRun: 08/28/2001  
Experimenters: Jason Marshall  
ClientType: Electronics Manufacturer  
ProjectNumber: Project #1  
Substrates: Ceramics  
PartType: Coupon  
Contaminants: Adhesive, Waxes  
Cleaning Methods: Immersion/Soak  
Analytical Methods: Gravimetric

Purpose: Evaluating additional cleaners for removal of reed wax.

Experimental Procedure: One cleaner was tested based on client request. The solution was used at full strength. Uni-Clear, was heated to 100F in a heated water bath (due to its low flash point of 140 F). Six preweighed coupons were coated with the supplied Stacking wax (3) and the Crystalbond 590 (3). The wax and the 590 were heated with a hot air gun and a moderate layer was added to the coupon. These coupons were then allowed to cool to room temperature and weighed again. Three coupons were immersed in the cleaner. Observations were made at 5, 10, 15, 20, 30 and 45 minutes. After the final observation, the coupons were rinsed in DI water and dried using air blow off. Coupons were then weighed a final time and percent efficiencies were calculated for each cleaner.

Results: Of the two contaminants evaluated, only the wax was removed from the coupons. The wax was removed within 30 minutes, which was very consistent with the reed wax removal of 25 minutes. The Crystalbond 590 should no visual signs of being removed by Uni-Clear. Table 1 lists the calculated efficiencies for the two contaminants cleaned.

Table 1. Cleaning Efficiencies

Uni-Clear	Wax	590	
Coupon 1	100.05	16.99	no change
Coupon 2	100.00	-0.17	no change
Coupon 3	99.98	0.32	no change
Average	100.01	5.71	n/a

Summary:

<b>Substrates:</b>		Ceramics			
<b>Contaminants:</b>		Adhesive, Waxes			
<b>Company Name:</b>	<b>Product Name:</b>	<b>Conc.:</b>	<b>Efficiency:</b>	<b>Effective:</b>	<b>Observations:</b>
Universal Photonics	Uni Clear	100	100.01	<input checked="" type="checkbox"/>	wax
Universal Photonics	Uni Clear	100	5.71	<input type="checkbox"/>	crystalbond 590

Conclusion: Uni-Clear was found to be an excellent cleaner for both the Reed wax and the Stacking. The cleaner was in effective in removing the Crystalbond 590.