CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008

DateRun: 06/17/2008

Experimenters: Jason Marshall

ClientType: Electro-Optical Devices

ProjectNumber: Project #1

Substrates: Glass/Quartz

PartType: Coupon

Contaminants: Films

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: To evaluate the three follow up products on removing the EVA film from glass surface.

Experimental Procedure: The three products from the previous trial were used at full strength and room temperature. Nine preweighed glass coupons were contaminated with a strip of the supplied EVA material. The material was heated with a Master Appliance Heat gun to melt the EVA onto the surface. Coupons were weighed again to determine the amount of contamination added. Three coupons were then cleaned with each solution.

Cleaning was performed by soaking a WypAll X60 reinforced paper towel with the cleaning solution. The coupons were then manually wiped for unto 1 minute followed by a 5 second wipe with a dry towel. Visual observations were made and recorded during cleaning. Once dry, the coupons were weighed a final time and removal efficiencies were calculated for each product.

Results: Only one product removed the EVA during the manual cleaning. An additional product started to break the bond between the glass and the EVA but was not able to completely remove the contaminant from the surface. The Clorox Green Works glass cleaner need under 10 seconds to completely remove the film from the glass. The table lists the amount of film added, the amount remaining, the efficiency for each coupon cleaned and the percent of the film that was displaced from the surface (lifted).

Cleaner	Initial wt	Final wt	% Removed	Lift	Time needed
BioGold #3	0.9039	0.9360	-3.55	10	
	0.8863	0.0028	99.68	100	
	0.9515	0.9809	-3.09	2	
Soy Strong	0.8845	0.8642	2.30	5	
	1.0171	1.0060	1.09	40	
	1.0247	1.0301	-0.53	90	
Green Works Glass	1.1530	-0.0001	100.01	100	10 sec
	1.0672	0.0001	99.99	100	10 sec
	0.8393	0.0002	99.98	100	5 sec

Summary:

Substrates:	Glass/Quartz				
Contaminants:	Films				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Vertec BioSolvents	VertecBio Gold 3	100	31.01	☐	
Spartan Chemical Company	Soy Strong	100	0.95	☐	
Clorox Company	Green Works Glass and Surface Cleaner	100	99.99	☑	

Conclusion: The Green Works Glass cleaner was very effective at removing the EVA film and will next be evaluated for flux removal.