CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008

DateRun: 06/16/2008

Experimenters: Jason Marshall

ClientType: Electro-Optical Devices

ProjectNumber: Project #1

Substrates: Glass/Quartz

PartType: Coupon

Contaminants: Adhesive

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: To evaluate lower VOC products for adhesive removal

Experimental Procedure: Seven products were selected from the laboratory's web database, www.cleanersolutions.org, based on supplied information from the client. Each product was used at full strength and room temperature. Twenty-one preweighed glass coupons were contaminated with a strip of the supplied adhesive tape. 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 2 minutes followed by a 10 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: Three of the seven products removed more than 90% of the adhesive within 2 minutes of the manual wiping and three removed more than 60%. The Green Works Glass cleaner need less than a minute to remove nearly all the adhesive. The table lists the amount of adhesive added, the amount remaining after cleaning and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Bio Gold 3	0.1425	0.0313	78.04
	0.1363	0.0040	97.07
	0.1563	0.0018	98.85
Gaffiti Remover SAC	0.1543	0.0602	60.99
	0.1798	0.0591	67.13
	0.1728	0.0661	61.75
Gaffiti Remover	0.1490	0.1168	21.61
	0.1299	0.1523	-17.24
	0.1771	0.1665	5.99
Soy Strong	0.1606	0.0185	88.48
	0.1646	0.0022	98.66
	0.1533	0.0235	84.67
Bean-a-doo	0.1844	0.0651	64.70
	0.1622	0.0789	51.36
	0.1711	0.0437	74.46
United 605	0.1395	0.0469	66.38
	0.1681	0.0619	63.18
	0.1504	0.0515	65.76
Green Works Glass Cleaner	0.1937	0.0011	99.43
	0.1317	0.0012	99.09
	0.1625	0.0011	99.32

Summary:

Substrates:	Glass/Quartz				
Contaminants:	Adhesive				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Vertec BioSolvents	VertecBio Gold 3	100	91.32	☑	

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Spartan Chemical Company	Graffiti Remover SAC	100	63.29	☐	
Twin Rivers Technologies	Graffiti Remover	100	3.45	☐	
Spartan Chemical Company	Soy Strong	100	90.60	☑	
Franmar Chemical	Bean-e-doo (Parts Washer Solvent)	100	63.50	☐	
United Laboratories International	Smart Solve 605	100	65.10	☐	
Clorox Company	Green Works Glass and Surface Cleaner	100	99.28	☑	

Conclusion: The three products that removed over 90% (Bio Gold 3, Soy Strong and Green Works) will be evaluated for compatibility with end product materials.