CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2018

DateRun: 12/02/2018

Experimenters: Ted Kearney

ClientType: Cleaner Manufacturer

ProjectNumber: Project #14

Substrates: Ceramics, Glass/Quartz

PartType: Part

Contaminants: Stickies, Soaps

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric, Visual

Purpose: To evaluate supplied glass cleaning products for level of effectiveness while using manual cleaning methods.

Experimental Procedure: Pre-weighed, glass, and chrome coupons were coated with SCL Soil #2 (glass soap scum) which was made of water 51.5%, hair gel 25.6%, Toothpaste 10.4%, Shaving Cream 5.3%, Hair Spray 3.7% and Spray Deodorant 3.5% using a hand held swab and allowed to dry for 24 hours at room temperature. The contaminated coupons were weighed again to determine the amount of soil added.

Three coupons were placed into a Gardner Straight Line Washability unit. A Wypall L60 reinforced wipe was attached to the cleaning sled and soaked with 1 spray of cleaning solutions. Each coupon was sprayed 1 time with the same cleaning solution. The solution was allowed to penetrate for 30 seconds followed by cleaning in the SLW unit for 5 cycles (~10 seconds). Coupons were left to dry overnight before final weights and efficiencies were recorded.

Visual observations were made on the coupons for spotting and filming following the general guidelines set forth in the CSPA DCC 09A. Filming is best recognized as “haziness” or overall “milkiness”, while streaking is best identified as dried droplets or “spotting”, usually found strung together into thin white lines. Each coupon was evaluated separately for filming and streaking, according to a scale of “1” to “7” with:

Filming	Streaking
7 = high filming	7 = high streaking (poor performance)
1 = no visible filming	1 = no visible streaking (excellent performance)

Results:

Cleaner	Substrate	Coupon	Initial Wt. Cont.	Final Wt. Cont	% Cont Removed	% Avg Removed
1	A	34	0.0633	0.0015	97.63	99.16
		81	0.0685	0.0000	100.0	
		45	0.0677	0.0001	99.85	
	B	17	0.0700	0.0136	80.57	89.73
		7	0.0737	0.0033	95.52	
		11	0.0796	0.0055	93.09	
2	A	8	0.0763	0.0012	98.43	99.22
		14	0.0694	0.0001	99.86	
		16	0.0635	0.0004	99.37	
	B	28	0.0842	0.0181	78.50	90.24
		24	0.0683	0.0031	95.46	
		18	0.0711	0.0023	96.77	

Visual Analysis:

Cleaner	Substrate	Streaking Score	Filming Score	Avg. Streaking Score	Avg. Filming Score
Jenny Glass Cleaner	Glass	3.5	2	2.3	1.5
		2	1.5		
		1.5	1		
	Chrome	4	4	2.8	3.7
		2.5	4.5		
		2	2.5		

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Rejoice Glass Cleaner	Glass	2	2.5	2.5	2
		3.5	2		
		2	1.5		
	Chrome	3	2	2.7	2.3
		3.5	3		
		1.5	2		

Overall Average Streaking and Filming

Cleaner - Substrate	Substrate	Average Streaking Score	Average Filming Score
Jenny Glass Cleaner	Glass	2.3	1.5
	Chrome	2.8	3.7
Rejoice Glass Cleaner	Glass	2.5	2
	Chrome	2.7	2.3

Summary:

Substrates:	Ceramics, Glass/Quartz				
Contaminants:	Stickies, Soaps				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Brand Buzz	Brand Buzz Jenny Glass Cleaner	100%	94.44	☑	
Brand Buzz	Brand Buzz Rejoice Glass Cleaner	100%	94.73	☑	

Conclusion:

Each of the cleaners was effective in soil removal of above 89% for each surface tested (glass & chrome). The lowest soil removal efficiency was Jenny Glass Cleaner used on the chrome substrate. The highest soil removal efficiency of the cleaners tested was Rejoice Glass Cleaner on the glass substrate. The cleaner which cleaned and removed the most soil from the chrome substrate was Rejoice Glass Cleaner which had a 90.24% removal efficiency. Based on the streaking and filming table, overall Jenny Glass Cleaner was the highest performing glass cleaner, followed by Rejoice Glass Cleaner. The highest performing cleaner for chrome, it was Rejoice Glass Cleaner, followed by Jenny Glass Cleaner.