CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2013
DateRun:	10/29/2013
Experimenters:	Junhee Cho, Loc Nguyen
ClientType:	Cleaning Equipment Mfr
ProjectNumber:	Project #1
Substrates:	Glass/Quartz, Chrome
PartType:	Coupon
Contaminants:	Films, Soaps
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric, Visual
Purpose:	To evaluate supplied products for glass cleaning using manual cleaning

Experimental Procedure:

Supplied products were diluted with room temperature water to the requested dilution; 1 gram of salt was resolved into 1.5 liter of water then were electronically activated two times. PH was 8.6 and chorine level was 50 ppm. Preweighed Glass; Chorme; Mirror coupons were coated with SSL Soil 2 (Glass soap scum: 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 X60 reinforced wipe was attached to the cleaning sled and soaked with 1 spray of cleaning solutions. Each coupon was sprayed 1 times 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). At the end of the cleaning, coupons were wiped once with a dry paper towel. Final weights were recorded and efficiencies 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, (i.e., product residues without added soil), according to a scale of "1" to "7" where:

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

ChemistriesEvaluated: Toucan; Perforce - Glass cleaner;

Results:

Products had filming and spotting levels below the acceptable level from Green Seal cutoff number 3. The tables list the amount of soil added, the amount remaining, the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed	Ave Substrate	Product Ave
Toucan Glass					
	0.1866	0.0141	92.44	96.36	91.00
	0.1201	0.0028	97.67		
	0.1460	0.0015	98.97		
Toucan Chrome					
	0.1807	0.0154	91.48	81.13	
	0.1952	0.0510	73.87		
	0.2027	0.0445	78.05		
Toucan Mirror					
	0.1130	0.0066	94.16	95.52	
	0.1355	0.0050	96.31		
	0.1226	0.0048	96.08		
Proforce Glass					
	0.1564	0.0023	98.53	97.45	94.11
	0.1509	0.0055	96.36		
	0.1538	0.0039	97.46		
Proforce Chrome					

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	0.4493	0.0200	95.55	91.08	
	0.4054	0.0323	92.03		
	0.1542	0.0221	85.67		
Proforce Mirror					
	0.2922	0.0106	96.37	93.79	
	0.2387	0.0308	87.10		
	0.1338	0.0028	97.91		

Visual Results

	Filming				Streaking			
Coupon	tester 1	2	3	AVE	tester1	2	3	AVE
Toucan Glass	3	4	3	3.3	4	3	3	3.3
Toucan Mirror	5	3	5	4.3	3	5	5	4.3
Proforce Glass	5	4	4	4.3	3	5	5	4.3
Proforce Mirror	6	5	6	5.6	5	6	7	6

Summary:

Substrates:	Glass/Quartz, Chrome				
Contaminants:	Films, Soaps				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
EcoLab	Proforce Glass Cleaner	200	94.11	☑	
Toucan	Toucan Eco	100	91.00	☑	

Conclusion: The compared products had overall average removal efficiency greater than 90% but they did not have acceptable filming and streaking levels.