

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2013  
 DateRun: 10/30/2013  
 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. Prewieghed 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 "miliness", 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	4	3	3.3
Toucan Mirror	5	3	4.3	3	5	4.3
Proforce Glass	5	4	4.3	3	5	4.3
Proforce Mirror	6	5	5.6	5	6	6

### Summary:

<b>Substrates:</b>	Glass/Quartz, Chrome				
<b>Contaminants:</b>	Films, Soaps				
<b>Company Name:</b>	<b>Product Name:</b>	<b>Conc.:</b>	<b>Efficiency:</b>	<b>Effective:</b>	<b>Observations:</b>
EcoLab	Proforce Glass Cleaner	200	94.11	<input checked="" type="checkbox"/>	
Toucan	Toucan Eco	100	91.00	<input checked="" type="checkbox"/>	

### Conclusion:

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