CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2011
DateRun:	04/24/2011
Experimenters:	Timothy Weil, Johnny Le
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Glass/Quartz, Chrome
PartType:	Coupon
Contaminants:	Films, Soaps
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	To evaluate supplied products for glass cleaning using manual cleaning
Experimental Procedure:	Preweighed chrome and glass coupons were coated with SSL Soil 2 Glass Soap Scum (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 handheld 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 5-7 sprays of cleaning solutions. Each coupon was sprayed 7-10 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.
Results:	The three products were all successful in removing the glass soap scum from the two surfaces using manual cleaning. The supplied product was the most consistent cleaner (lowest standard deviation) and had the highest average soil removal of the three products. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Orbio 5000SC Glass	Initial	Final	% Removal	Sub Ave	Over All Ave	Std Dev
	0.0311	0.0009	97.11	92.58	91.58	3.9
	0.0369	0.0044	88.08			
	0.0363	0.0027	92.56			
Orbio 5000SC Chrome						
	0.0578	0.0032	94.46	90.58		
	0.0300	0.0039	87.00			
	0.0494	0.0048	90.28			
Windex Glass						
	0.0340	0.0040	88.24	80.77	88.16	9.6
	0.0375	0.0068	81.87			
	0.0457	0.0127	72.21			
Windex Chrome						
	0.0743	0.0026	96.50	95.54		
	0.0459	0.0021	95.42			
	0.0622	0.0033	94.69			
7th Gen-glass cleaner Glass						
	0.0714	0.0118	83.47	89.03	88.80	4.1
	0.0805	0.0060	92.55			
	0.0729	0.0065	91.08			
7th Gen-glass						

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cleaner Chrome						
	0.1263	0.0142	88.76	88.57		
	0.0380	0.0060	84.21			
	0.0414	0.0030	92.75			

Summary:

Substrates:	Glass/Quartz, Chrome				
Contaminants:	Films, Soaps				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
SC Johnson & Son Inc	Windex Glass & More Cleaner (Spray)	100	88.16	☑	
Seventh Generation	Natural Glass and Surface Cleaner	100	88.80	☑	
Orbio Technologies	Orbio Multi-Surface Cleaner	100	91.58	☑	

Conclusion: The supplied product worked as well as the two comparative products for glass soil removal using manual wiping.