CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2011
DateRun:	08/21/2011
Experimenters:	Timothy Weil, Johnny Le, Mahima Tank
ClientType:	Cleaner Manufacturer
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:	Preweighed chrome and glass coupons were coated with glass soap scum 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 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 20 cycles (~30 seconds). At the end of the cleaning, coupons were allowed to air dry for 24 hours and weighed for a final time. Efficiency was calculated for each coupon. Filming Streaking 7 = high filming 7 = high streaking poor (performance) 1 = no visible filming 1 = no visible streaking (excellent performance)
Results:	Both the Clorox Glass Cleaner and Windex removed on average more than 96% of the glass soap scum. For glass surfaces, Clorox Glass Cleaner and Windex both removed on averaged above 98%. For chrome surfaces, Clorox Glass Cleaner removed over 99% of the soil and Windex removed over 96% of the soil.

	Initial wt	Final wt	% Removed	%Average
Clorox Green Works Natural Glass Cleaner Glass	0.0858	0.0010	98.83	98.54
	0.0705	0.0007	99.01	
	0.0538	0.0012	97.77	
Johnson & Johnson Windex Glass	0.0988	0.0025	97.47	98.17
	0.0525	0.0008	98.48	
	0.0556	0.0008	98.56	
Clorox Green Works Natural Glass Cleaner Chrome	0.0645	0.0002	99.69	99.06
	0.0829	0.0010	98.79	
	0.0845	0.0011	98.70	
Johnson & Johnson Windex Chrome	0.0410	0.0024	94.15	96.82
	0.0835	0.0015	98.20	
	0.0799	0.0015	98.12	

Visual Evaluation

CLEANING LABORATORY EVALUATION SUMMARY

Streak						
Cleaner	Observer 1	Observer 2	Observer 3	Average		Overall Ave
Clorox	1	2	1	4	2.33	2.56
Clorox	2	2	2	3	2.33	
Clorox	3	2	3	4	3	
J & J	1	1	1	1	1	2.11
J & J	2	3	2	1	2	
J & J	3	4	3	3	3.33	
Filming						
Cleaner	Observer 1	Observer 2	Observer 3	Average		Overall Ave
Clorox	1	1	1	1	1	2.22
Clorox	2	2	2	2	2	
Clorox	3	4	3	4	3.67	
J & J	4	3	2	4	3	2.22
J & J	5	1	2	2	1.67	
J & J	6	2	2	2	2	

Summary:

Substrates:	Glass/Quartz, Chrome				
Contaminants:	Films, Soaps				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Clorox Company	Green Works Natural Glass Cleaner	3.3	98.80	☑	
SC Johnson & Son Inc	Windex Glass & More Cleaner (Spray)	100	97.50	☑	

Conclusion:

The Clorox product performed slightly better than the conventional product in gravimetric evaluations. Visual observations showed that the Clorox product had better performance in regard to streaking but in regard to filming, the products performed similarly. Further testing could be completed to address different scenarios in preparation, application and cleaning.