CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2008
DateRun:	04/30/2008
Experimenters:	Jason Marshall, Shweta Bansal
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Ceramics, Fiberglass, Chrome
PartType:	Coupon
Contaminants:	Films, Soaps
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	To retest Do-it-Yourself formulations for bathroom cleaning.
Experimental Procedure:	The two supplied cleaning product was diluted to vendor recommended concentrations for bathroom cleaning. Two other household products were included for comparative purposes. Preweighed fiberglass, ceramic and chrome coupons were coated with SSL Soil 1 (Bathroom soap scum: Vaseline Dry Skin Lotion 21.4%, Dial Clean Rinsing Body Wash 14.3%, Market Basket Shampoo & Conditioner (Pert)28.6%, Soft Soap Natural Liquid hand soap 21.4%, Coast Deodorant bar soap 7.2% and Water 7.1%) 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 Wypal reinforced wiper 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 cleaning unit was run for 20 cycles (~33 seconds). Coupons were blotted dry with a clean Wypal wiper. Final weights were recorded, efficiencies were calculated and recorded.
Results:	One of the DIY formulations and one of the other products removed over 90% of the bathroom soil. The second DIY formulation had little success following the established protocols. Additional rinsing or longer cleaning times may result in improved efficiency. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Fiberglass	0.2958	0.0125	95.77
	0.1459	0.0014	99.04
	0.2725	0.0097	96.44
Ceramic	0.1962	0.0542	72.38
	0.1609	0.1089	32.32
	0.1728	0.0532	69.21
Chrome	0.1080	0.0055	94.91
	0.1437	0.0073	94.92
	0.1437	0.0116	91.93
Fiberglass	0.2458	0.0030	98.78
	0.2516	0.0020	99.21
	0.1366	0.0033	97.58
Ceramic	0.1580	0.0119	92.47
	0.1806	0.0297	83.55
	0.2447	0.0193	92.11
Chrome	0.1813	0.0126	93.05
	0.2483	0.0023	99.07
	0.1172	0.0063	94.62
Fiberglass	0.1681	0.0050	97.03
	0.1684	0.0049	97.09
	0.2021	0.0070	96.54
Ceramic	0.2492	0.0166	93.34
	0.1355	0.0146	89.23
	0.1884	0.0050	97.35
Chrome	0.2106	0.0196	90.69
	0.1661	0.0149	91.03
	0.1264	0.0139	89.00

CLEANING LABORATORY EVALUATION SUMMARY

Fiberglass	0.2006	0.1979	1.35
	0.3714	0.3523	5.14
	0.1343	0.1043	22.34
Ceramic	0.1151	0.0958	16.77
	0.0955	0.0537	43.77
	0.1312	0.0742	43.45
Chrome	0.1719	0.2027	-17.92
	0.1644	0.3503	-113.08
	0.1150	0.3320	-188.70

Summary:

Substrates:	Ceramics, Fiberglass, Chrome
Contaminants:	Films, Soaps

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Clorox Company	Green Works Multi-Surface Cleaner	100	82.99	☐	
Clorox Company	Green Works Glass and Surface Cleaner	100	94.49	☑	
EZ Clean Green	Natural Vinegar Cleaning Spray	100	93.48	☑	
EZ Clean Green	Natural Soft Scrub	100	-20.76	☐	

Conclusion:

Two products had overall average efficiencies over 85% and would be considered effective based on the SSL testing methodology.

The original results in the previous trial may have been due to base weights being incorrect prior to soiling. Results from this trial more closely matched visual observations.