

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2012
 DateRun: 08/15/2012
 Experimenters: Junhee Cho, Johnny Le
 ClientType: Cleaning Equipment Mfr
 ProjectNumber: Project #1
 Substrates: Ceramics, Plastic, Chrome
 PartType: Coupon
 Contaminants: Films, Soaps
 Cleaning Methods: Manual Wipe
 Analytical Methods: Gravimetric

Purpose: To evaluate the supplied products for bathroom cleaning using manual cleaning

Experimental Procedure: One gram of Tartar was added into 20 fl oz of water (PH 6.5) in supplied spray bottle of Trio then was electronically charged for 3min. after activating, the PH of activated water was changed into 11. The other supplied cleaning products, Clorox Green Work Bathroom Cleaner and Comet Bathroom, were used at the recommended dilution. Pre-weighed chrome, ceramic and polycarbonate coupons were coated with SSL Soil 1 (Bathroom soap scum: All-in-one shampoo and conditioner 28.6%, Dry skin lotion 21.4%, Liquid hand soap 21.4%, Liquid body wash 14.3%, 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 Wypall X60 reinforced wipe was attached to the cleaning sled and soaked with 5-7 sprays of cleaning solutions. Each coupon was sprayed 2-3 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 (~33 seconds). Final weights were measured and efficiencies were calculated and recorded.

Chemistries Evaluated: Trio (1g of Tartar, PH 11), Water (PH 6.5), Clorox Green work Bathroom Cleaner, Comet Bathroom Cleaner

Results: The Trio removed the TURI bathroom soil over than 95% on polycarbonate and chrome, but Trio only removed 83% of bathroom soil on ceramic coupon. The other three cleaners also removed the soil over than 85% on all surfaces except water with ceramic. The detail information is below.

Cleaner	Initial wt	Final wt	% Removed
Trio_ploycarb			
	0.1662	0.0086	94.83
	0.1062	0.0010	99.06
	0.0843	0.0075	91.10
Trio_ceramic			
	0.1041	0.0225	78.39
	0.4892	0.0513	89.51
	0.1339	0.0258	80.73
Trio_chrome			
	0.0727	0.0035	95.19
	0.1158	0.0058	94.99
	0.1156	0.0043	96.28
Water_ploycarb			
	0.1196	0.0063	94.73
	0.1336	0.0019	98.58
	0.1008	0.0305	69.74
Water_ceramic			
	0.1069	0.0058	94.57
	0.0848	0.0117	86.20
	0.1295	0.0405	68.73
Water_chrome			
	0.0687	0.0053	92.29
	0.0729	0.0065	91.08
	0.0737	0.0043	94.17

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Clorox Greenwork Bathroom Cleaner_ploycarb			
	0.1284	0.0123	90.42
	0.1637	0.0048	97.07
	0.1555	0.0077	95.05
Clorox Greenwork Bathroom Cleaner_ceramic			
	0.2309	0.0528	77.13
	0.1354	0.0146	89.22
	0.0891	0.0013	98.54
Clorox Greenwork Bathroom Cleaner_chrome			
	0.0734	0.0073	90.05
	0.0924	0.0037	96.00
	0.1352	0.0067	95.04
Comet Bathroom Cleaner_ploycarb			
	0.0612	0.0071	88.40
	0.1036	0.0061	94.11
	0.1160	0.0097	91.64
Comet Bathroom Cleaner_ceramic			
	0.1779	0.0393	77.91
	0.1396	0.0010	99.28
	0.1505	0.0111	92.62
Comet Bathroom Cleaner_chrome			
	0.1252	0.0061	95.13
	0.1111	0.0063	94.33
	0.1053	0.0061	94.21

Summary:

Substrates:	Ceramics, Plastic, Chrome				
Contaminants:	Films, Soaps				
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
GenEon	GenEon Solution	100	91.12	<input checked="" type="checkbox"/>	
Water	Water	100	87.79	<input checked="" type="checkbox"/>	
Clorox Company	Green Works Multi-Surface Cleaner	100	92.06	<input checked="" type="checkbox"/>	
Clorox Company	Formula 409 All Purpose Cleaner	100	91.96	<input checked="" type="checkbox"/>	

Conclusion:

The Trio product had an overall average efficiency over 85% and performed similar as the green and conventional cleaning product.