CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2014

DateRun: 11/11/2014

Experimenters: Loc Nguyen, George Liang

ClientType: Cleaning Equipment Mfr

ProjectNumber: Project #1

Substrates: Ceramics, Porcelain

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: The comparative cleaning products were used at the ready to use concentrations. Preweighed 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 2-3 sprays of cleaning solutions. Each coupon was sprayed 1-2 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). At the end of the cleaning, coupons were wiped once with a dry paper towel. Final weights were recorded and efficiencies were calculated and recorded.

Chemistries Evaluated: Force of Nature, SC Johnson Scrubbing Bubbles; Lysol Power Bathroom Cleaner

Results:
Force of Nature
pH = 7.03
Concentration = 310 ppm

Results:

Cleaner	Initial wt	Final wt	% Removed	Average	Std Dev
HealthierCleaning_BathroomSoil_ForceOfNature_Porcelain	0.3953	0.1607	59.35	83.41	15.88
	0.3299	0.0271	91.79		
	0.3106	0.0222	92.85		
	0.3396	0.1522	55.18		
	0.3403	0.0303	91.10		
	0.4315	0.0082	98.10		
	0.2985	0.0679	77.25		
	0.3207	0.0209	93.48		
	0.2860	0.0240	91.61		
HealthierCleaning_BathroomSoil_ForceOfNature_Ceramics	0.3463	0.0104	97.00	95.68	1.45
	0.4215	0.0144	96.58		
	0.5296	0.0165	96.88		
	0.4166	0.0110	97.36		
	0.3864	0.0181	95.32		
	0.3480	0.0172	95.06		
	0.3863	0.0159	95.88		
	0.4833	0.0328	93.21		
	0.4021	0.0248	93.83		
HealthierCleaning_BathroomSoil_ScrubbingBubbles_Porcelain	0.2593	0.0981	62.17	66.48	10.22
	0.3080	0.1037	66.33		
	0.2862	0.1091	61.88		
	0.3139	0.1358	56.74		
	0.2825	0.1459	48.35		
	0.5447	0.1456	73.27		
	0.4124	0.0804	80.50		
	0.3745	0.0931	75.14		

CLEANING LABORATORY EVALUATION SUMMARY

	0.3204	0.0836	73.91		
HealthierCleaning_BathroomSoil_ScrubbingBubbles_Ceramics	0.2736	0.0171	93.75	80.53	20.62
	0.3130	0.0085	97.28		
	0.2553	0.0255	90.01		
	0.5037	0.0333	93.39		
	0.4535	0.0411	90.94		
	0.5518	0.0274	95.03		
	0.2857	0.0974	65.91		
	0.2808	0.1147	59.15		
	0.2440	0.1481	39.30		
HealthierCleaning_BathroomSoil_Lysol_Porcelain	0.4480	0.0265	94.08	91.36	5.65
	0.2807	0.0221	92.13		
	0.4557	0.0138	96.97		
	0.3277	0.0630	80.78		
	0.4081	0.0177	95.66		
	0.3795	0.0315	91.70		
	0.4628	0.0108	97.67		
	0.2785	0.0361	87.04		
	0.3950	0.0544	86.23		
HealthierCleaning_BathroomSoil_Lysol_Ceramics	0.3183	0.0631	80.18	87.35	10.36
	0.2417	0.0654	72.94		
	0.4099	0.017	95.85		
	0.3971	0.0313	92.12		
	0.2953	0.0879	70.23		
	0.4936	0.0193	96.09		
	0.2487	0.0231	90.71		
	0.4437	0.008	98.20		
	0.3306	0.0335	89.87		

Summary:

Substrates:	Ceramics, Porcelain				
Contaminants:	Films, Soaps				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Healthier Cleaning Innovations	Force of Nature	100	89.51	☑	
SC Johnson & Son Inc	Scrubbing Bubbles	100	83.14	☑	
Reckitt Benckiser	Lysol Bathroom Cleaner	100	97.35	☑	

Conclusion:

All three products had a wide range of cleaning performance as indicated by the standard deviation for the surface materials cleaned. The Force of Nature compared well with the Lysol Power Bathroom product in average performance and was only less consistent. The product had a higher soil removal rate than the Scrubbing Bubbles and was more consistent in the cleaning over the two surfaces.