CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2014
DateRun:	08/11/2014
Experimenters:	Loc Nguyen, George Liang
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Ceramics, Plastic, Steel
PartType:	Coupon
Contaminants:	Hucker's Soil
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	To evaluate three supplied products for all purpose cleaning following GS 37 requirements
Experimental Procedure:	Three sets of nine ceramic, stainless steel, and polycarbonate coupons were weighed and then coated with the Hucker's Soil Formulation (JifCreamy peanut butter 9.2%, salted butter 9.2%, Arrowhead Mills stone ground wheat flour, 9.2%, egg yolk, 9.2%, evaporated milk 13.8%, distilled water 45.8%, Printer's ink with boiled linseed oil 0.9%, saline solution 2.7%) using a hand held swab and allowed to dry for 2 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 Kimberly-Clark Wypal x60 reinforced paper towel was attached to the cleaning sled and soaked with 1 spray of cleaning solution. Each coupon was sprayed 1 time with the same cleaning solution. The cleaning unit was run for 20 cycles (~33 seconds). Final weights were recorded, efficiencies were calculated and recorded. ChemistriesEvaluated: Hydris Orange; Clorox 409;

Results:

	Initial wt	Final wt	% Removed
hydrolysis orange_soil1_ceramic	0.2776	0.1211	56.38
hydrolysis orange_soil1_ceramic	0.2740	0.0230	91.61
hydrolysis orange_soil1_ceramic	0.2833	0.0420	85.17
hydrolysis orange_soil1_plastic	0.2752	0.0276	89.97
hydrolysis orange_soil1_plastic	0.2798	0.0193	93.10
hydrolysis orange_soil1_plastic	0.2791	0.0614	78.00
hydrolysis orange_soil1_painted steel	0.2800	0.0970	65.36
hydrolysis orange_soil1_painted steel	0.2803	0.0350	87.51
hydrolysis orange_soil1_painted steel	0.2731	0.0651	76.16
409_soil1_ ceramic	0.2817	0.0228	91.91
409_soil1_ ceramic	2.2772	0.0385	98.31
409_soil1_ ceramic	0.2735	0.0422	84.57
409_soil1_ plastic	0.2799	0.0205	92.68
409_soil1_ plastic	0.2832	0.0168	94.07
409_soil1_ plastic	0.2776	0.0221	92.04
	0.2767	0.0592	78.60

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409_soil1_ painted steel			
409_soil1_ painted steel	0.2777	0.0398	85.67
409_soil1_ painted steel	0.2770	0.0472	82.96

Summary:

Substrates:	Ceramics, Plastic, Steel				
Contaminants:	Hucker's Soil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
EcoLab	Hydris Orange	100	80.36	☑	
Clorox Company	Formula 409 All Purpose Cleaner	100	88.98	☑	

Conclusion: The Hydris Orange formulation performed slightly below the level of acceptable cleanliness compared to Formula 409.