

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2014

DateRun: 08/12/2014

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 (Jif Creamy 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.

Chemistries Evaluated: 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

## CLEANING LABORATORY EVALUATION SUMMARY

409_soil1_ painted steel	0.2767	0.0592	78.60
409_soil1_ painted steel	0.2777	0.0398	85.67
409_soil1_ painted steel	0.2770	0.0472	82.96

Summary:

<b>Substrates:</b>	Ceramics, Plastic, Steel				
<b>Contaminants:</b>	Hucker's Soil				
<b>Company Name:</b>	<b>Product Name:</b>	<b>Conc.:</b>	<b>Efficiency:</b>	<b>Effective:</b>	<b>Observations:</b>
EcoLab	Hydris Orange	100	80.36	<input checked="" type="checkbox"/>	
Clorox Company	Formula 409 All Purpose Cleaner	100	88.98	<input checked="" type="checkbox"/>	

Conclusion:

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