CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2010
DateRun:	10/06/2010
Experimenters:	Jason Marshall, Junhee Cho, Timothy Weil, Johnny Le, Kathleen Tenaglia
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Ceramics, Plastic, Steel
PartType:	Coupon
Contaminants:	Hucker's Soil
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric, Visual
Purpose:	To evaluate three supplied products for all purpose cleaning
Experimental Procedure:	Preweighed ceramic, plastic G-10 and painted steel coupons were coated with 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%, Shaws saline solution 2.7%) 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 Kimberly-Clark Wypal reinforced paper towel 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). At the end of the cleaning, coupons were wiped once with a dry paper towel. Final weights were recorded, efficiencies were calculated and recorded.
Results:	One of the products, Seventh Generation, was effective at removing more than 85% of the Hucker’s soil from two of the surfaces using manual wiping. The remaining products removed in excess of 80% and more than tap water. The table lists the amount of soil added, the amount remaining after cleaning and the calculated efficiency for each of the ceramic and painted steel coupons cleaned.

Cleaner	Initial wt	Final wt	% Removed
Seventh Generation -ceramic			
	0.2151	0.0164	92.38
	0.0662	0.0105	84.14
	0.1299	0.0135	89.61
Seventh Generation -painted steel			
	0.2491	0.0414	83.38
	0.2205	0.0146	93.38
	0.0658	0.0020	96.96
Light Duty - 0.25 - ceramic			
	0.1852	0.0151	91.85
	0.0682	0.0111	83.72
	0.0508	0.0121	76.18
Light Duty - 0.25 - painted steel			
	0.2004	0.0356	82.24
	0.2026	0.0206	89.83
	0.0570	0.0134	76.49
Moby 1800 -ceramic			
	0.0918	0.0132	85.62
	0.0436	0.0052	88.07
	0.0536	0.0056	89.55
Moby 1800 -painted steel			
	0.1772	0.0333	81.21
	0.0482	0.0138	71.37

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	0.1645	0.0331	79.88
Light Duty - 0.50 - ceramic			
	0.1525	0.0283	81.44
	0.1352	0.0154	88.61
	0.1360	0.0214	84.26
Light Duty - 0.50 - painted steel			
	0.0684	0.0091	86.70
	0.0394	0.0076	80.71
	0.1091	0.0239	78.09
Sanimaster - ceramic			
	0.1354	0.0146	89.22
	0.1269	0.0099	92.20
	0.0782	0.0208	73.40
Sanimaster -painted steel			
	0.0480	0.0129	73.12
	0.0542	0.0144	73.43
	0.1800	0.0225	87.50
All Purpose CL2 5 oz/gal -ceramic			
	0.0878	0.0089	89.86
	0.0410	0.0053	87.07
	0.1380	0.0097	92.97
All Purpose CL2 5 oz/gal -painted steel			
	0.1046	0.0270	74.19
	0.0407	0.0110	72.97
	0.0623	0.0102	83.63
Moby 1750 -ceramic			
	0.2474	0.0208	91.59
	0.0718	0.0075	89.55
	0.0403	0.0063	84.37
Moby 1750 -painted steel			
	0.0497	0.0150	69.82
	0.0783	0.0204	73.95
	0.1034	0.0174	83.17
Tap water - MN - ceramic			
	0.1096	0.0280	74.45
	0.1383	0.0272	80.33
	0.1320	0.0273	79.32
Tap water - MN - painted steel			
	0.1171	0.0300	74.38
	0.0737	0.0193	73.81
	0.0590	0.0129	78.14

Summary:

Substrates:	Ceramics, Plastic, Steel				
Contaminants:	Hucker's Soil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Seventh Generation	Free & Clear All Purpose	100	89.97	☑	
Water	Water	100	76.74	☐	
Orbio Technologies	Orbio Moby	100	82.62	☐	
EcoLink	Sanimaster	100	81.48	☐	

Conclusion:

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Gravimetric and visual rankings showed that the Seventh Generation product as being the most effective at removing the Hucker's soil. The gravimetric analysis had the All Purpose CL2 as being the second most effective product but visually this product was rated as the 6th cleanest by all three members of the panel. A follow up test will be conducted on the plastic tiles in an effort to determine a calculated soil removal.