CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2008
DateRun:	11/19/2008
Experimenters:	Jason Marshall, Junhee Cho
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 supplied products for ASTM D4488-95 or GS 37 standard to qualify for EPA DfE program

Experimental Procedure:

Two of the supplied cleaning products were diluted to the requested concentrations (25% and 20% by weight) and the third requested product was used at full strength.

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 Wypall 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:

The two supplied products removed over 85% of the Hucker's soil using manual wiping. All three products performed comparably to the selected industry standard product. The table lists the substrate cleaned, the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Green Force - ceramic	0.5077	0.0049	99.03
	0.2808	0.0090	96.79
	0.1597	0.0088	94.49
Green Force - painted steel	0.2510	0.0191	92.39
	0.9002	0.0093	98.97
	0.1734	0.0133	92.33
Green Force - plastic	0.1524	0.0060	96.06
	0.2127	0.0053	97.51
	0.1565	0.0096	93.87
5261 - ceramic	0.1724	0.0098	94.32
	0.2865	0.0167	94.17
	0.1674	0.0062	96.30
5261 - painted steel	0.1627	0.0181	88.88
	0.3113	0.0254	91.84
	0.1822	0.0256	85.95
5261 - plastic	0.1890	0.0156	91.75
	0.1657	0.0063	96.20
	0.1925	0.0043	97.77
Green Works - ceramic	0.2425	0.0083	96.58
	0.2274	0.0143	93.71
	0.1945	0.0047	97.58

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Green Works - painted steel	0.2086	0.0316	84.85
	0.1625	0.0409	74.83
	0.2931	0.0106	96.38
Green Works - plastic	0.2028	0.0085	95.81
	0.3177	0.0102	96.79
	0.2606	0.0130	95.01

Summary:

Substrates:	Ceramics, Plastic, Steel				
Contaminants:	Hucker's Soil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Alex C Ferguson Inc	Green Force Ultra	25	95.72	☑	
Alex C Ferguson Inc	AFCO 5261 Liquid Terg	20	93.02	☑	
Clorox Company	Green Works Multi-Surface Cleaner	100	92.39	☑	

Conclusion: Two products had overall average efficiencies greater than 85% and would be considered effective based on the SSL testing methodology.