CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2012
DateRun:	03/28/2012
Experimenters:	Jason Marshall, Johnny Le, Loc Nguyen
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 two supplied products against a comparative product for all purpose cleaning

Experimental Procedure:

The two supplied cleaning products were diluted with DI water at room temperature to vendor recommended concentration for all purpose cleaning (3 oz/gal and 4 oz/gal). The third product was used at provided dilution from vendor.

Preweighed ceramic, plastic G-10 and painted steel coupons were coated with Hucker's Soil Formulation (Jif Creamy Peanut Butter, Salted Butter, Arrowhead Mills stone ground wheat flour, Egg Yolk, Evaporated milk, Distilled water, Printer's ink with boiled linseed oil, Shaws saline solution) using a hand held 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:

All three products were effective at removing the Hucker’s soil from the three surfaces using manual wiping. The comparative product (3R) resulted in the highest efficiency, removing 93% of the Hucker’s soil. The Horizon Sparkle was slightly better than the Citrashine product. The table lists the amount of soil added, the amount remaining after cleaning and the calculated efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Sparkle -plastic			
	0.0637	0.0058	90.89
	0.1198	0.0101	91.57
	0.0475	0.0087	81.68
Sparkle -painted steel			
	0.1135	0.0036	96.83
	0.0582	0.0043	92.61
	0.0474	0.0038	91.98
Sparkle -ceramic			
	0.1007	0.008	92.06
	0.0989	0.0109	88.98
	0.058	0.0038	93.45
Citrashine - plastic			
	0.0842	0.0026	96.91
	0.064	0.0103	83.91
	0.0729	0.0057	92.18
Citrashine - painted steel			
	0.0406	0.004	90.15
	0.0494	0.0032	93.52
	0.1525	0.0261	82.89
Citrashine - ceramic			
	0.0855	0.0042	95.09

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	0.0311	0.005	83.92
	0.091	0.0239	73.74
3R - plastic			
	0.0404	0.0015	96.29
	0.0758	0.0063	91.69
	0.0426	0.0014	96.71
3R - painted steel			
	0.0891	0.006	93.27
	0.174	0.0061	96.49
	0.0855	0.0069	91.93
3R - ceramic			
	0.0528	0.0034	93.56
	0.0613	0.0056	90.86
	0.0284	0.0015	94.72

Summary:

Substrates:	Ceramics, Plastic, Steel
Contaminants:	Hucker's Soil

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Next-Gen Supply Group	3R All Purpose Cleaner	100	93.95	☑	
U.N.X. Incorporated	Horizon Sparkle Multipurpose Cleaner	2.3	91.12	☑	
U.N.X. Incorporated	Horizon Citrashine	3.125	88.03	☑	

Conclusion: Both supplied products performed well using manual cleaning on an all-purpose soil.