CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2011
DateRun:	04/26/2011
Experimenters:	Johnny Le
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Ceramics, Rubber, Steel
PartType:	Coupon
Contaminants:	Hucker's Soil
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	To evaluate three supplied products for all purpose cleaning
Experimental Procedure:	Preweighed ceramic, polycarbonate and painted steel coupons were coated with Hucker's Soil Formulation (Jiffy 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 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:	The supplied product worked as well as the two comparative products using manual cleaning for all purpose soils. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Orbio 5000SC ceramic			
	0.1142	0.0042	96.32
	0.1820	0.0035	98.08
	0.1349	0.0075	94.44
Orbio 5000SC polycarb			
	0.0720	0.0262	63.61
	0.0904	0.0146	83.85
	0.1542	0.0173	88.78
Orbio 5000SC Stainless Steel			
	0.0324	-0.0003	100.92
	0.1092	0.0068	93.77
	0.0615	0.0014	97.72
3R's Ceramic			
	0.1656	-0.0017	101.02
	0.1197	-0.0034	102.84
	0.1804	0.0097	94.62
3R's Polycrab			
	0.0719	0.0162	77.47
	0.1056	0.0128	87.88
	0.0685	0.0148	78.39
3R's Stainless Steel			
	0.0359	0.0042	88.30
	0.0893	0.0050	94.40
	0.0626	0.0028	95.52

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Formula 409 Ceramic			
	0.1186	0.0064	94.60
	0.1013	0.0067	93.39
	0.1181	0.0069	94.15
Formula 409 Polycarb			
	0.0422	0.0083	80.33
	0.0617	0.0120	80.55
	0.0786	0.0108	86.26
Formula 409 Stainless Steel			
	0.0459	0.0048	89.54
	0.0337	0.0018	94.66
	0.0343	0.0035	89.80

Summary:

Substrates:	Ceramics, Rubber, Steel				
Contaminants:	Hucker's Soil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Next-Gen Supply Group	3R All Purpose Cleaner	3	91.16	☑	
Clorox Company	Formula 409 All Purpose Cleaner	100	89.25	☑	
Orbio Technologies	Orbio Multi-Surface Cleaner	100	90.83	☑	

Conclusion:

While the efficiency of the Orbio product (90.83% +/- 11.4) showed slightly lower performance on polycarbonate substrate, its overall efficiency when combining its effectiveness for all three substrates was above 90%. The performance was statistically the same as Formula 409 (89.25% +/-5.7) and 3R's product (91.16% +/-9.0).